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*Ioē, here an Erle, who to serve his God,
Hath sharply tasted of proud Pashas Rod,
Whose learning, Piety & true worth heeing knowne,
To all the world, makes all the world his owne.*

JOHN AMOS COMENIUS

BISHOP OF THE MORAVIANS

HIS LIFE AND EDUCATIONAL WORKS

BY

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PREFACE TO SECOND EDITION.

IN issuing the Second edition of this book it occurs to me to say that it is possible that a critical mind examining *any one* of Comenius's writings might here and there take exception to my statement of his opinions. It is therefore necessary to explain that wherever the opinions expressed by Comenius in any of his Treatises were subsequently modified, I have given his final views.

For the rest, I can only repeat what I stated in the preface to the first edition, that this book is the most complete—so far as I know the only complete—account of Comenius and his works that exists in any language¹. I have gone carefully through the four volumes of his didactic writings, containing 2271 pages of Latin, good, bad, and indifferent. The German translation of one of the treatises has also been before me. The life is written, like the rest of the book, entirely from a collation of original sources; but I do not endeavour to give an account of Comenius's *ecclesiastical* relations.

It is not always easy to determine how much of a voluminous and prolix writer should be given. My object has been to omit nothing essential. There is much in Comenius that is fanciful, and even fantastic, and of this I have endeavoured, in suitable places, to give enough to exhibit the author's manner of thought.

¹ This may not be correct now (1899).

There is much, again, that is now universally accepted in education, which I have yet preserved, because the statement of it is essential to a proper exposition of Comenius's system. My aim has been to omit nothing that is characteristic or useful, or historically important.

The scholastic habit of division and subdivision was inherited by Comenius, and along with this he had in great force the systematising impulse of the German mind, though not himself a German. He can leave nothing to be understood, but will sometimes imperil his whole theory by insisting on the small as well as the great. While following closely the argument of Comenius I have dropped superfluous divisions and distinctions ; but wholly to avoid repetition was impossible.

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March, 1884.

NOTE.

In this, the Sixth edition, I have extended the Introduction so as to give a fuller view of the transition from the Renaissance to the Modern Period.

S. S. L.

April, 1899.

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INTRODUCTION.

TRANSITION FROM THE RENAISSANCE TO THE MODERN PERIOD.

It is usual to date the revival of letters from the time of Petrarch in Italy (1304-74) and Chaucer in England (1328-1400), and to find the chief impulse which the movement received from without, in the dispersal of Greek scholars over Europe at the taking of Constantinople by the Turks in 1453 and in the discovery of the Art of Printing (1430-40).

The new birth of the mind of Europe was a process similar to that which is repeated in the intellectual history of every man who questions and throws aside those conventionalities of life and opinion in the midst of which he has grown up. The mind of Europe was oppressed with a burden of pedantry of form and dogmatism in theology, ritual, philosophy, grammar, and rhetoric. Looking straight at things—things of sense and of thought, contemplating those questions which every thoughtful man has ultimately to answer for himself, in a direct way and no longer through the medium of mere phrases and formulæ, constituted the essence of the revival. The regeneration of the human

spirit was felt in almost every department of intellectual and moral activity. It is a mistake however to think that there was, at this time, any sudden breach of the continuity of European life. There had been an awakening on the subject of education in the time of Charlemagne and the Hellenic tradition had never quite died out at Byzantium. The University movement of the twelfth century, moreover, had familiarised men's minds with the re-discussion of old problems. Ancient Greek learning had also for centuries been moulding the philosophy and medicine of the great Mohammedan centres of intellectual activity.

This return of the soul of man to Reality—the attempt to penetrate to the truth of things through the hardened crust of verbalism and dogma was, I think we may say, the true characteristic of the revival. For the dry bones of Grammar, Logic, and Rhetoric, was now substituted the living substance of thought; and the intellectual gymnastic of the schools gave place to the free play of mind once more striving to bring itself into contact with nature and reality. The revival was thus a return to realism—the realism, that is to say, of the thought of man exercised directly on the things that pertain to humanity.

The classical writers of Greece and Rome were, in those days, almost the sole exponents of the new life, and the alliance in them of truth and felicity of perception with beauty of expression so captivated the minds of the learned men of all civilized countries that they surrendered to them their own individuality.

Beauty of expression was regarded as inseparable from truth and elevation of thought. The former was held to be the guarantee of the latter. The movement soon shared the fate of all enthusiasms. Ere long, the new form was worshipped as the old had been, and to it the spirit and substance were subordinated. Style became the supreme object of the educated class, and successful imitation, and thereafter laborious criticism, became the marks of the highest culture. The relation of ancient Rome to Greece was somewhat similar; but with this difference, that the Roman, being himself cast in an antique mould, brought into literature the contribution of his own vigour and originality, and, above all, his own vernacular.

The gain to schools and universities was great, but the effects were not lasting. The form of literature was divorced from the substance. When style and a wide and various knowledge of stylists became the ambition of the cultivated man and the measure of his intellectual greatness, it can readily be understood that the education of boys suffered. The object of schoolmasters being to prepare their pupils to admire and imitate perfection of literary expression in an ancient tongue, they had for this purpose to fall back on the old grammatical drill and rhetorical rules. The chief permanent benefit of the Renaissance to youth lay in the simplification of Grammar and Rhetoric, and in the substitution of the works of the classical writers themselves in the place of pedantic and preceptive teaching baldly expressed in barbarous Latinity.

Pure Humanism, as a mere Art and Language revival, soon wore itself out so far as the school was concerned, though leaving behind it a rich inheritance. It did its work. It could not, however, in the form it ultimately took—a mere gospel of style, and this in a foreign tongue while vernacular literature was everywhere advancing,—satisfy the needs of men; while grammar, though now simplified, could assuredly not permanently interest the minds of boys. ‘The admiration of ancient authors,’ says Bacon, ‘the hate of the schoolmen, the exact study of languages...did bring in an affectionate study and *copiā* of speech...This grew speedily to an excess, for men began to hunt more after words than matter; and more after the choiceness of the phrase, and the round and clean composition of the sentence, and the sweet falling of the clauses and the varying and illustration of their works with tropes and figures, than after the weight of matter, worth of subject, soundness of argument, life of invention, or depth of judgment¹.’

The ever-recurring debate between the claims of form and substance is with us now in these days. In literature at least, whatever may be said of the pictorial and plastic arts, man cannot live by ‘form’ alone. ‘Words,’ says Bacon, ‘are but the images of matter.’ Bacon in so speaking reveals that he was a realist in the sense in which Quintilian was a realist, and Vittorino da Feltre and Montaigne, Rabelais and Ascham. The substance of things, not the form, could alone keep the intellect of the world of men and boys living and

¹ *Advancement of Learning*, I., 4. 2.

permanently interested, because these alone could provide nutrition for the mind.

Let us look a little more closely at the influence of the Renaissance on the School. To deal with this subject adequately would take a volume; but we may at least here signalise the great motive forces which were in active operation.

It would have been strange if, in this new spring time of human reason, man's relations to the unseen and eternal had escaped criticism. We find the names of Wycliffe and Huss conspicuous in the period of Petrarch and Chaucer. When, later, subjects of spiritual interest came fully within the scope of the modern movement, these took precedence of all others, for they concerned the business and touched the heart of the humblest as well as of the highest. Reform in religion introduced the element of passion into the revival, and supplied the ethical force necessary to sustained and persistent activity. This introduction of the element of religious passion marks what is sometimes called the second revival towards the end of the fifteenth century.

In the earlier half of the sixteenth century the Classical or Humanistic movement was represented by such men as Ludovicus Vives, Erasmus, Budæus, and Sir Thomas More, and the parallel religious activity by the great names of Luther and Calvin. In Melanchthon the literary and theological streams met. Luther was unquestionably a Humanist, but it was inevitable that the deeper spiritual interests of which he was the

guardian should obscure the less urgent and less vital claims of learning and culture. In his followers this result was conspicuous. Men's minds became engrossed with a reconstruction of Faith and a reorganisation of the Church, an enterprise which shook Europe and disturbed the old order to its foundations. The political and ecclesiastical wars may be said to have lasted nearly one hundred and thirty years.

In the History of Education it is important to recognise the existence of the two parallel streams of intellectual and spiritual regeneration to which I have referred. They were both aspects of the same great movement of reason as opposed to authority, of individualism as opposed to organization. The leaders of both, like the leaders of all great social changes, at once bethought themselves of the schools. Their hope was in the young, and hence the reform of education early engaged their attention.

The pure Humanists, on the one hand, were intent on the substitution of literary culture for grammatical and logical forms, and cared only for the education of the few; but their sympathy with the religious reformation was notorious, and they shared the suspicion with which the Protestant Reformers were regarded by the mediæval Church. To know Greek was to be exposed to insinuations of heresy. An attitude of hostility towards the independent activity of the human mind was not, however, peculiar to the mediæval Church; it is to be easily detected in certain forms of Protestantism. Both alike are obscurantist, in so far as they regard Reason with suspicion, if not with aversion. They have a profound

distrust of Humanity, and would limit the activity of the human mind by narrow and foregone conclusions.

The Church Reformers, on the other hand, had an interest in the progress of culture scarcely less sincere than that of the Humanists, but to this they added compassion for the dense ignorance of the masses of the people. The human soul, wherever found, was to them an object of infinite concern, and, unlike the pure Humanists, they aimed at universal instruction. The new form of the old faith, moreover, could sustain itself only on the basis of popular education. The Reformers were educational philanthropists in the truest sense, and hence the people's school is rightly called the child of the Reformation. It would be out of place here, in illustration of what has been said, to do more than advert to Luther's impassioned appeals, and to Melancthon's universal activity which earned for him the honourable designation of *Præceptor Germaniæ*. To the same union of the theological with the philanthropic spirit was due the noble scheme of popular education embodied in the Book of Polity of the Reformed Church of Scotland, written so early as 1560.

Accordingly the educational aims of the leaders of the Humanistic and Theological revivals respectively, while they did not necessarily conflict, were different both in their spirit and scope; and it is important to note this, if we are to understand the history of Schools from the beginning of the sixteenth century down to our own time: for motive causes in operation 400 years ago are still active. While the literary

Humanists, such as Erasmus, had for their aim culture, and this almost exclusively through the literatures of Greece and Rome, the theological Humanists, though recognising culture, yet desired to subordinate it at every stage to a religious purpose. The latter had consequently on their side popular sentiment, because they most truly represented the popular need. 'Above all things,' said Luther, 'let the Scriptures be the chief and the most frequently used reading-book, both in primary and in *high* schools. . . . Where the Holy Scriptures do not bear sway, there I would counsel none to send his child; for every institution will degenerate where God's Word is not in daily exercise. . . . The High Schools ought to send forth men thoroughly versed in the Scriptures to become bishops and pastors, and to stand in the van against heretics, the devil, and, if need be, the whole world.' With all this, Luther's views of education were large and liberal, including music, gymnastic, and history, as well as languages and mathematics. Melanchthon also, while urging the pursuit of ancient philosophy in its original sources, and of the literatures of Greece and Rome, yet held by Christian teaching as the main end of the school. So with Neander and Valentine Trotzendorf. The distinguished friend of Luther and of the English Ascham, John Sturm of Strasburg, whose great classical school was a model for all countries, propounded as his educational aim 'a wise and persuasive piety, knowledge, and purity and elegance of diction.' The Humanistic Protestant schools thus embraced Christian teaching as a

vital part of their curriculum, the desire of the Reformers being always to unite true learning with sound theology. It was this theological humanism (so to speak) that ultimately gained the day among the Reformed Churches.

The Roman Catholic Church meanwhile was not insensible to the scholastic changes which the modern spirit had made inevitable. The new order of the Jesuits was authorised in 1540. Their special function as a Church Society was preaching, confession, and education; but the last-named chiefly. 'To this,' says Ranke, 'they thought of binding themselves by a special clause in their vows; and although that was not done, they made the practice of this duty imperative by the most cogent rules. Their most earnest desire was to gain the rising generation.' In 1626 they had already 467 Colleges and thirty-six Seminaries, and to their zealous and self-denying labours the reaction from Protestantism was mainly due. While subordinating all learning, nay, every act of life, to the Catholic idea, they yet had open minds for educational improvements. The best parts of the methods pursued in the schools of Trotzendorf and Sturm were embodied in their system. Familiarity with Latin as a common language, however, rather than with the literature of Latin, was their school aim. At the same time, they were sufficiently influenced by the Humanistic revival to discard scholastic barbarism and to cultivate style. Where rhetoric and style are cultivated for themselves, the result is a certain discipline of the faculties certainly, but an absence of the genuine substance of education. There could be no danger to

the Church in this; for, with such aims, expression, not thought, becomes the prime consideration; and it is only thought about the realities of sense or about the products of thought itself that calls forth original power and intellectual independence. The Jesuit course included Latin and a moderate amount of Greek, with logic and rhetoric for the more advanced classes. They could show as good a curriculum as the public grammar schools of their time, and a much better organisation. The superiority of the Protestant schools lay in the greater freedom of spirit which characterised them, and the greater regard paid to the substance of literature. The Jesuits, however, were far in advance of their contemporaries in laying down for their teachers a definite educational method—stiff and inelastic certainly, but yet a method. Little by little, little at a time, cultivation of the memory, thoroughness in a few things, easy and graduated work, and a mild but persistent discipline, were merits belonging to the Jesuit schools two hundred years before they were practised to any large extent elsewhere. It is not our business here to enter more largely into the Jesuit system: our object is simply to show that the Roman Catholic Church, acting through this religious Order, accepted the Humanistic movement, under narrow restrictions certainly, but these not of a kind to render their Humanism a mere name.

Thus it was that on both sides of the great controversy which began 400 years ago, and still continues, religion furnished the prime motive of education; and so it will ever be, although it is possible that the form

which the religious spirit takes may be so veiled as to be invisible even to itself. On one side, it was recognised that the way to faith was through obedience, and that obedience, the first of virtues in a true Catholic, can be secured in two ways—by the careful shaping of the minds of those who demand education, and by the equally careful neglect (shall we not say?) of the intelligence of those who can be safely passed by as mere bond-slaves of authority. On the other side, the Humanistic revival was early lost in the more pressing claims of the Theological revival; and, inasmuch as intellectual assent was necessary to the life of Protestantism, the humanistic spirit permanently survived only in the movement to instruct the masses. The theological spirit it was that gave the impulse necessary to carry education down into the lower strata of society, and so to raise the humanity of the people. In the presence of the competing claims of the two Theologies, pure Humanism could not sustain itself.

Accordingly the scholastic improvements effected under the influence of Melanchthon and Sturm¹, and, in England, of Colet, Lillie, Ascham, and Mulcaster, did not, as I have already said, endure, save in a very limited sense. Pure classical literature was now read,—a great gain certainly; but this was all. There was no tradition of method, as was the case in the Jesuit order. The great examples of Vittorino da Feltre and subsequently of Neander and Trotzendorf were forgotten. During the latter half of the sixteenth century, the complaints

¹ Sturm died at the age of 83 in 1589.

made of the state of the schools, the waste of time, the barbarous and intricate grammar rules, the cruel discipline, were loud and long, and proceeded from men of the highest intellectual standing. It has to be remembered, however, that all Europe had been embroiled in civil and ecclesiastical contentions, and that the seeds of popular education and of an improved secondary system could not possibly have developed themselves in an atmosphere so ungenial. Indeed, until the remodelled school code of Saxony appeared in 1773 the dawn so full of promise was clouded. Two hundred years were lost. Scotland alone was during this period busily carrying out, in a truly national sense, the programme of the Reformation and the Humanists, but this, in accordance with the genius of Protestantism, mainly on the popular side.

But the complaints and demands of men of learning and piety were not relaxed. To unity in the Reformed Churches they looked, but looked in vain, for a settlement of opinion, and to the school they looked as the sole hope of the future. The school, as it actually existed, might have well filled them with despair. Even in the Universities, Aristotelian Physics and Metaphysics, and with them the scholastic philosophy, still held their own. The reforms initiated mainly by Melanchthon had not, indeed, contemplated the overthrow of Aristotelianism; for he and the other Humanists merely desired to substitute Aristotle himself in the original for the Latin translation from the Arabic (necessarily misleading), and the Greek and Latin classics for barbarous epitomes.

These very reforms, however, perpetuated the reign of Aristotle, when the spirit that actuated the Reformers was dead and there had been a relapse into the old Logic. Modern Europe had not yet originated a philosophy. It was waiting for Descartes. The Jesuit reaction, also, which recovered France and South Germany for the Papal See, was powerful enough to preserve a footing for the metaphysical theology of St Thomas Aquinas and the schoolmen. In England, Milton was of opinion that the youth of the Universities were, even so late as his time, still presented with an 'asinine feast of sow-thistles.' These retrogressions in School and University serve to show how exceedingly difficult it is to contrive any system of education, middle or upper, which will work of itself when the contrivers pass from the scene. Hence the importance, it seems to me, of having in every University, as part of the philosophical faculty, a department for the exposition of this very question of Education—surely a very important subject in itself as an academic study, and in its practical relations transcending, perhaps, all others. How are the best traditions of educational theory and practice to be preserved and handed down, if those who are to instruct the youth of the country are to be sent forth to their work from our Universities with minds absolutely vacant as to the principles and history of their profession—if they have never been taught to ask themselves the questions, 'What am I going to do?' 'Why?' and 'How?' This subject is one worthy of consideration both by the Universities and the State. It was the

want of Method that led to the decline of Schools after the Reformation period; it was the study of Method which gave the Jesuits the superiority that on many parts of the Continent they still retain.

THE MODERN PERIOD.

FRANCIS BACON, 1561—1626.

In 1605 there appeared a book which was destined to place educational method on a scientific foundation, although its mission is not yet, it is true, accomplished. This was Francis Bacon's *Advancement of Learning*, which was followed, some years later, by the *Organon*. For some time the thoughts of men had been turning to the study of Nature. Bacon represented this movement, and gave it the necessary impulse by his masterly survey of the domain of human knowledge, his pregnant suggestions, and his formulation, imperfect as it was, of scientific method. Bacon was not aware of his relations to the science and art of Education; he praises the Jesuit schools, not knowing that he was by his philosophy subverting their very foundations. We know inductively: that was the sum of Bacon's teaching. In the sphere of outer Nature, the scholastic saying, *Nihil est in intellectu quod non prius fuerit in sensu*, was accepted, but with this addition, that the impressions on our senses were not themselves to be trusted. The mode of verifying sense-impressions, and the grounds of valid and necessary inference, had to be investigated and applied. The educational bearing of this is manifest; for it is clear

that if we can tell *how* it is we *know*, it follows that the method of intellectual instruction is scientifically settled.

Bacon himself says, writing to Lord Burleigh in 1592,—‘I have as vast contemplative ends as I have moderate civil ends, for I have taken all knowledge to be my province; and if I could purge it of two sorts of rovers, whereof the one with frivolous disputations, confutations and verbosities (the schoolmen), the other with blind experiments and auricular traditions and impostures (unmethodical investigators, e.g. alchemists, astrologers, etc.) hath committed so many spoils, I hope I should bring in industrious observations and profitable inventions and discoveries—the best state of that province. This...is so fixed in my mind that it cannot be removed.’ And in his letter to Toby Matthews in 1609 he says,—‘.....the question between me and the ancients is not of the virtue of the race, but of the *rightness of the way*.’ As the philosopher of Realism and of the Inductive method, Bacon, it may be, only summed up the thoughts and practice of several predecessors; but he was the man of genius who (as frequently happens) gathered up those hints, anticipations and aspirations which constitute a ‘tendency,’ and gave them shape.

In the department of education one of the chief services Bacon rendered was his including it among the sciences to be studied. It was by him called ‘tradition’—the handing down of the acquired intellectual possessions of mankind to those who are to be our successors. But this was not all; for, in speaking of this subject, he was naturally influenced by the new gospel of the real—

of the founding of knowledge on seeing *for ourselves* what was there before us, and basing our conclusions on accurate observation, and a sound method of rational procedure. Nature was no longer to be studied by means of divisions and definitions of hastily formed concepts, and compelled to fit itself into premature axioms in which the very processes of nature were forestalled. Generalization was to follow only in the wake of carefully observed facts. 'Man,' he says, in the *Novum Organum*, 'who is the servant and interpreter of Nature, can act and understand no further than he has, either in operation or contemplation, observed of the method or order of Nature.' And again, 'Men have sought to make a world from their own conceptions and to draw from their own minds all the materials which they employed; but if instead of doing so, they had consulted experience and observation, they would have had facts and not opinions to reason about, and might have ultimately arrived at the knowledge of the laws which govern the material world.....Thus they may hope to arrive at principles.....luminous and well defined, such as Nature herself will not refuse to acknowledge.' But Bacon did not invent Induction any more than he invented the human mind; he, however, unquestionably gave to the world the Logic of Induction and formulated the practice of Galileo and the premonitions of Da Vinci. He was, as Isaac Walton called him, 'the great secretary of Nature and Science.'

To speak of the Baconian induction as Goethe did, is to misapprehend it. It is true that to the man of

genius, one fact is worth a thousand to the uninspired laboratory hodman, and that the laborious collection and comparison of 'instances' is not always necessary. On the other hand, it is equally true that the flashes of insight which enable a great man to put his finger on the true cause and ultimate generalization in any department of knowledge, is simply a swift anticipatory inductive process. Nor will any 'flash of insight' ever be accepted by the world as demonstrated and as objective truth, until it has been indirectly verified and established by the reverse process of Deduction—that is to say, by applying the supreme generalization to the elucidation of lower generalizations, and ultimately of individual facts, thereby showing that it truly explains them by containing them.

Bacon was not in his reform of Method thinking of psychology and the manner in which the mind attains to knowledge: he had his eye fixed chiefly on the substance itself of knowledge, and he saw that it was inductively, and by various steps of inductive activity, that what was presented to the senses received its verification. This, and this only, was the way in which we knew a thing for certain. It no doubt followed from this that we should *teach* inductively; but it was to Bacon's successors that we owe the full exposition of what was implicit in Bacon's thought. Bacon and his school were thus the founders of modern method in education—not as based on psychology, but rather as founded on the actual process whereby the truth of things was ascertained. He looked at the *matter* of thought, not at the thinking process. A more advanced psychology claims in these days to

ground the realistic or inductive method of inquiry and instruction on a study of abstract mind itself, on a criticism of knowing, and so to extend its sphere and supplement its defects.

Bacon and the Baconians, in short, occupied themselves with the Content, not the pure Form, of Thought, and found their method in the *way* in which things were truly known. They fixed their attention on things as growing into the thought or truth of themselves in our minds, not on thought or thinking as such.

We thus find in Bacon the pregnant seeds of reforms both as regards the substance and method of education. He attacks the universities as still the home of scholastic traditions and futile sophistries; he sketches a pansophic ideal; he points to the importance of method; he recognises teachers as students of an Art; he points the way to realistic studies:—above all, he has faith in the future. It is these ideas which we find taking practical shape in his successors.

Allowing all possible credit to his precursors, Ludovicus Vives, Da Vinci, Galileo and others (and to certain contemporaries whom he strangely ignores), we yet recognise in Bacon the true Father of Modern Method. He represents the transition from the old world to the new, and more than any other man is to be revered as the 'first of the Moderns'; and this not only in the large sphere of investigation generally, but in the narrower sphere of the School, with which we have here to do. That we now enter on the distinctively 'modern' period of European intellectual activity is sufficiently attested

by the great names in every department of investigation. It was not by accident, but rather in accordance with the natural evolution of mind, that we find almost contemporaries Galileo, Bacon, Descartes, Boyle, Kepler, and Hugo Grotius.

It seems to me that, while we certainly fail to find in Bacon a developed system of education correlated with the method of the sciences, we yet encounter in the *Advancement of Learning*, in the conclusion of the sixth book of the *De Augmentis* (the Latin translation of the *Advancement* extended) in the Essay on Studies, and in the letter to Savile (Provost of Eton), many pregnant hints which suggest a *method*, as well as a *curriculum*, of instruction. In the *De Augmentis*, for example, he gives the preference to the teacher who 'transplants knowledge into the scholar's mind *as it grew in his own.*' 'A gardener, again,' he says, 'takes more pains with the young than with the full-grown plant, and men commonly find it needful in any undertaking to begin well.' And on the training of teachers he adds, 'We give scarce a thought to our teachers and care little for what they may be; and yet we are for ever complaining because rulers are rigid in the matter of laws and penalties, but indifferent to the right training of the young.' The importance of proceeding from the more easy to the more difficult in learning, and the mental effects of different kinds of studies, are also adverted to. And as to subjects, it was no difficult matter for his followers to recognise in their master an advocate for realities in the school: 'Be not wrapt up in the past; there is an actual present lying all about you look up and behold it in its grandeur.'

If encyclopædism or pansophy, that is to say, the correlation of sciences in a unity as taught in that encyclopædic university of which Bacon has a brilliant vision in the *New Atlantis*, was the ultimate resting-place of the adult mind, it was only one step to the conclusion that the education of the young should be so begun and conducted as to lead to this Great Temple of all Knowledge. A broad realistic foundation was thus necessary. Education he calls an 'early custom'; it is all important then that the custom should be a wise custom from the beginning. Here we have the germ of much in Comenius.

We read the history of educational thought in its relation to wider movements with small intelligence, if we do not see in Bacon the gatherings of the fruits of the renaissance movement in so far as it was a study of the realities both of things and thoughts,—a groping after reality both in science, philosophy and literature; and further, detect in this a formulation of intellectual Protestantism. Authority, as such, was not in precise terms set aside, but its doom was fixed wherever the New Method was heartily accepted. The truth, as founded on an ever-fresh and ever-growing study of the facts of nature and mind, was now and henceforth to be the sole aim of thinkers in every field of inquiry. The opinions of Colet, More and Erasmus were about to become the convictions of all educated men, but now carried into spheres of thought which these men had not contemplated. Authority, tradition, even revelation had all to be thrown into the melting-pot, not by an individual

centuries, but by the method and general consensus of the age. Thus it is that we, for the most part, find an intense Protestant feeling in those who advocated educational reform in the method and substance of instruction on Baconian lines. Ratke and Comenius are in scholastic matters representative of the school of Bacon in a wider than in a school sense. They are the reformers of the schools, it is true, but always with an eye to social and ecclesiastical, if not also political, changes. The Humanists, on the contrary, after their first efflorescence, belonged to the conservative reaction, and Loyola himself found no difficulty in annexing their territory in the interests of Obscurantism.

We need not fear the result of this free investigation, if we understand where we are going. So long as the great revelation of the human mind on man and his true life as a life in the ideals which we call philosophy and literature survive, the life of education will be found where the true life of man himself is best displayed; that is to say in philosophy and literature. The past, accordingly, will for ever retain its hold. It is essential that it should do so, if humanity is not to revert to barbarism¹.

I think I shall now best serve the student of education by bringing together those passages in Bacon which give a general indication of his contribution to the subject.

¹ Every student of Education should read the *Advancement of Learning* (Aldis Wright's Edition).

UNIVERSITIES, ETC.

‘First therefore, amongst so many great foundations of colleges in Europe, I find strange that they are all dedicated to professions, and none left free to arts and sciences at large. For if men judge that learning should be referred to action, they judge well; but in this they fall into the error described in the ancient fable, in which the other parts of the body did suppose the stomach had been idle, because it neither performed the office of motion, as the limbs do, nor of sense, as the head doth: but yet notwithstanding it is the stomach that digesteth and distributeth to all the rest. So if any man think philosophy and universality to be idle studies, he doth not consider that all professions are from thence served and supplied. And this I take to be a great cause that hath hindered the progression of learning, because these fundamental knowledges have been studied but in passage. For if you will have a tree bear more fruit than it hath used to do, it is not anything you can do to the boughs but it is the stirring of the earth and putting new mould about the roots that must work it. Neither is it to be forgotten, that this dedicating of foundations and ditations to professory learning hath not only had a malign aspect and influence upon the growth of sciences, but hath also been prejudicial to states and governments. For hence it proceedeth that princes find a solitude in regard of able men to serve them in causes of estate, because there is no education collegiate which is free; where such as were so disposed might give themselves to histories, modern languages, books of policy and civil discourse, and other the like enablements unto service of estate.

‘And because founders of colleges do plant, and founders of lectures do water, it followeth well in order to speak of the defect which is in public lectures; namely, in the smallness and meanness of the salary or reward which in most places is assigned unto them; whether they be lectures of

arts, or of professions. For it is necessary to the progression of sciences that readers be of the most able and sufficient men ; as those which are ordained for generating and propagating of sciences, and not for transitory use. This cannot be, except their condition and endowment be such as may content the ablest man to appropriate his whole labour and continue his whole age in that function and attendance ; and therefore must have a proportion answerable to that mediocrity or competency of advancement, which may be expected from a profession or the practice of a profession. So as, if you will have sciences flourish, you must observe David's military law, which was, *That those which staid with the carriage should have equal part with those which were in the action* ; else will the carriages be ill attended. So readers in sciences are indeed the guardians of the stores and provisions of sciences, whence men in active courses are furnished, and therefore ought to have equal entertainment with them ; otherwise if the fathers in sciences be of the weakest sort or be ill maintained,

Et patrum invalidi referent jejunia nati.

'And therefore inasmuch as most of the usages and orders of the universities were derived from more obscure times, it is the more requisite they be re-examined. In this kind I will give an instance or two, for example sake, of things that are the most obvious and familiar. The one is a matter, which though it be ancient and general, yet I hold to be an error ; which is, that scholars in universities come too soon and too unripe to logic and rhetoric, arts fitter for graduates than children and novices. For these two, rightly taken, are the gravest of sciences, being the arts of arts ; the one for judgement, the other for ornament. And they be the rules and directions how to set forth and dispose matter : and therefore for minds empty and unfraught with matter, and which have not gathered that which Cicero calleth *sylvæ* and *supellex*, stuff and variety, to begin with those arts (as

if one should learn to weigh, or to measure, or to paint the wind) doth work but this effect, that the wisdom of those arts, which is great and universal, is almost made contemptible, and is degenerate into chillish sophistry and ridiculous affectation. And further, the untimely learning of them hath drawn on by consequence the superficial and unprofitable teaching and writing of them, as fitteth indeed to the capacity of children. Another is a lack I find in the exercises used in the universities, which do make too great a divorce between invention and memory. For their speeches are either premeditate, in *verbis conceptis*, where nothing is left to invention, or merely extemporal, where little is left to memory. Whereas in life and action there is least use of either of these, but rather of intermixtures of premeditation and invention, notes and memory. So as the exercise fitteth not the practice, nor the image the life ; and it is ever a true rule in exercises, that they be framed as near as may be to the life of practice ; for otherwise they do pervert the motions and faculties of the mind, and not prepare them. The truth whereof is not obscure, when scholars come to the practices of professions, or other actions of civil life ; which when they set into, this want is soon found by themselves, and sooner by others.'

* * * * *

'Another defect which I note, ascendeth a little higher than the precedent. For as the proficiencie of learning consisteth much in the orders and institutions of universities in the same states and kingdoms, so it would be yet more advanced, if there were more intelligence mutual between the universities of Europe than now there is. We see there be many orders and foundations, which though they be divided under several sovereignties and territories, yet they take themselves to have a kind of contract, fraternity, and correspondence one with the other, insomuch as they have provincials and generals. And surely as nature createth brotherhood in families, and arts mechanical contract

brotherhoods in communalities, and the anointment of God superinduceth a brotherhood in kings and bishops, so in like manner there cannot but be a fraternity in learning and illumination, relating to that paternity which is attributed to God, who is called the Father of illuminations or lights.

‘The last defect which I will note is, that there hath not been, or very rarely been, any public designation of writers or inquirers concerning such parts of knowledge as may appear not to have been already sufficiently laboured or undertaken; unto which point it is an inducement to enter into a view and examination what parts of learning have been prosecuted, and what omitted. For the opinion of plenty is amongst the causes of want, and the great quantity of books maketh a shew rather of superfluity than lack; which surcharge nevertheless is not to be remedied by making no more books, but by making more good books, which, as the serpent of Moses, mought devour the serpents of the enchanters¹.’

Elsewhere, speaking of universities he says:

‘As water whether it be the dew of Heaven or the springs of the earth, doth scatter and lose itself in the ground, except it be collected into some receptacle where it may by union comfort and sustain itself; and for that cause the industry of man hath framed and made spring-heads, conduits, cisterns and pools; which men have accustomed likewise to beautify and adorn with accomplishments of magnificence and state as well as of use and necessity; so knowledge whether it descend from divine inspiration or spring from human sense, would soon perish and vanish to oblivion if it were not preserved in books², traditions, conferences and

¹ *Advancement of Learning*, pp. 78—83. (Aldis Wright’s Edition.)

² Libraries, he says, are as the shrines where all the relics of the ancient saints, full of true virtue and that without delusion and imposture, are preserved and reposed.

places appointed as universities, colleges and schools for the receipt and comforting the same.'

In the above passages, Bacon has always in his eye the scientific encyclopædia. And again in his *New Atlantis* Bacon returns to the consideration of the same subject,—'the amplification of the power and Kingdom of mankind over the world'; and in the Address made to the traveller by the Father of Solomon's House we get some idea of the vastness of his academic scheme. He says:

'God bless thee, my son; I will give thee the greatest jewel I have. For I will impart unto thee, for the love of God and men, a relation of the true state of Solomon's House. Son, to make you know the true state of Solomon's House, I will keep this order. First, I will set forth unto you the end of our foundation. Secondly, the preparations and instruments we have for our works. Thirdly, the several employments and functions whereto our fellows are assigned. And fourthly, the ordinances and rites which we observe.

'The End of our Foundation is the knowledge of the Causes, and secret motions of things; and the enlarging of the bounds of Human Empire, to the effecting of all things possible.'

He then proceeds to develope his conception of a great Institution devoted to Knowledge with a view always to the benefits thereby to be conferred on mankind; and it is no exaggeration to say that were all the Universities, Technical Colleges, Botanic and Zoological Gardens of Europe and America rolled into one, Bacon's great pansophic ideal would even then be only approximately attained.

Writing on the education of Youth to Sir Henry Savill¹, he expounds his views as to the

Power of Education.

‘But certain it is, whether it be believed or no, that as the most excellent of metals, gold, is of all other the most pliant and most enduring to be wrought ; so of all living and breathing substances, the perfectest (Man) is the most susceptible of help, improvement, impression, and alteration. And not only in his body, but in his mind and spirit. And there again not only in his appetite and affection, but in his power of wit and reason.’

* * * *

‘And as to the will of man, it is that which is most maniable and obedient ; as that which admitteth most medicines to cure and alter it. The most sovereign of all is Religion, which is able to change and transform it in the deepest and most inward inclinations and motions. And next to that is Opinion and Apprehension ; whether it be infused by tradition and institution, or wrought in by disputation and persuasion. And the third is example, which transformeth the will of man into the similitude of that which is much observant and familiar towards it. And the fourth is, when one affection is healed and corrected by another ; as when cowardice is remedied by shame and dishonour, or sluggishness and backwardness by indignation and emulation ; and so of the like. And lastly, when all these means, or any of them, have new framed or formed human will, then doth custom and habit corroborate and confirm all the rest. Therefore it is no marvel though this faculty of the mind of will and election, which inclineth affection and appetite, being but the inceptions and rudiments of will, may be so well governed and managed, because it admitteth access to so divers remedies to be applied to it and to work upon it. The effects whereof are so many and so known as require

¹ Vol. VII. p. 99. Spedding’s Edition.

no enumeration; but generally they do issue, as medicines do, into two kinds of cures; whereof the one is a just or true cure, and the other is called palliation.' * *

Method generally.

Exercises. 'That exercises are to be framed to the life; that is to say, to work ability in that kind, whereof a man in the course of actions shall have most use.

'The indirect and oblique exercises which do *per partes* and *per consequentiam* inable those faculties, which perhaps direct exercise at first would but distort. And those have chiefly place where the faculty is weak not *per se* but *per accidens*. As if want of memory grow through lightness of wit and want of stayed attention, then the mathematics or the law helpeth; because they are things wherein if the mind once roam it cannot recover.

'Of the cautions of exercise; as to beware lest by evil doing, as all beginners do weakly, 'a man grow and be inveterate in an ill habit; and so take not the advantage of custom in perfection, but in confirming ill.'

Order of Exercises. 'The marshalling and sequel of sciences and practices: Logic and Rhetoric should be used to be read after Poesy, History, and Philosophy. First exercise to do things well and clean; after, promptly and readily.'

In the *Advancement of Learning*¹ we find pertinent advice on the order and method in the study of Authors.

'There remain two appendices touching the tradition of knowledge, the one critical, the other pedantical. For all knowledge is either delivered by teachers, or attained by men's proper endeavours; and therefore as the principal part of tradition of knowledge concerneth chiefly writing of books, so the relative part thereof concerneth reading of

¹ p. 181. Aldis Wright's Edition.

books ; whercunto appertain incidently these considerations. The first is concerning the true correction and edition of authors ; wherein nevertheless rash diligence hath done great prejudice. For these critics have often presumed that that which they understand not is false set down : as the priest that, where he found it written of S. Paul *Demissus est per sportam*, mended his book, and made it *Demissus est per portam* ; because *sporta* was an hard word, and out of his reading : and surely their errors, though they be not so palpable and ridiculous, yet are of the same kind. And therefore, as it hath been wisely noted, the most corrected copies are commonly the least correct.

‘The second is concerning the exposition and explication of authors, which resteth in annotations and commentaries : wherein it is over usual to blanch the obscure places and discourse upon the plain.

‘The third is concerning the times, which in many cases give great light to true interpretations.

‘The fourth is concerning some brief censure and judgement of the authors ; that men thereby may take some election unto themselves what books to read.

‘And the fifth is concerning the syntax and disposition of studies ; that men may know in what order or pursuit to read.

‘For pedantical knowledge, it containeth that difference of tradition which is proper for youth ; whereunto appertain divers considerations of great fruit.

‘As first, the timing and seasoning of knowledges ; as with what to initiate them, and from what for a time to refrain them.

‘Secondly, the consideration where to begin with the easiest, and so proceed to the more difficult ; and in what courses to press the more difficult, and then to turn them to the more easy : for it is one method to practise swimming with bladders, and another to practise dancing with heavy shoes.

‘A third is the application of learning according unto the propriety of the wits ; for there is no defect in the faculties intellectual, but seemeth to have a proper cure contained in some studies : as, for example, if a child be bird-witted, that is, hath not the faculty of attention, the mathematics giveth a remedy thereunto ; for in them, if the wit be caught away but a moment, one is new to begin. And as sciences have a propriety towards faculties for cure and help, so faculties or powers have a sympathy towards sciences for excellency or speedy profiting : and therefore it is an inquiry of great wisdom, what kinds of wits and natures are most apt and proper for what sciences.

‘Fourthly, the ordering of exercises is matter of great consequence to hurt or help : for, as is well observed by Cicero, men in exercising their faculties, if they be not well advised, do exercise their faults and get ill habits as well as good ; so as there is a great judgement to be had in the continuance and intermission of exercises. It were too long to particularize a number of other considerations of this nature, things but of mean appearance, but of singular efficacy. For as the wronging or cherishing of seeds or young plants is that that is most important to their thriving, and as it was noted that the first six kings being in truth as tutors of the state of Rome in the infancy thereof was the principal cause of the immense greatness of that state which followed, so the culture and manurance of minds in youth hath such a forcible (though unseen) operation, as hardly any length of time or contention of labour can countervail it afterwards.’

In the above quotations we find the prognostication of many much-needed educational reforms. It was not, however, within Bacon’s purpose to elaborate his views in their specific relation to the ordinary school. This, as regards Method at least, was left to Ratke.

Bacon represented not only the longing for a new Method and for the co-ordination of the sciences ; but also the weariness of words and phrases and vain subtleties which had been gradually recovering their old place in spite of Rabelais, Montaigne, Ludovicus Vives, Erasmus and Ascham. The poets, also, had been placing Nature before the minds of men in a new aspect. The Humanists while unquestionably improving the aims and procedure of education, had been powerless to prevent the tendency to fall once more under the dominion of words, and to revert to mere grammatical and rhetorical form. The realism of human life and thought, which constituted their *raison d'être*, had been unable to sustain itself as a principle of action, because, as we have seen, there was no school of method. It was the study of the realities of sense that was finally to place education on a scientific basis, and make reaction, as to method at least, impossible.

The thought of any age determines the education of the age which is to succeed it. Education follows, it does not lead. The School and the Church alike march in the wake of science, philosophy, and political ideas. We see this illustrated in every epoch of human history, and in none so conspicuously as in the changes which occurred in the philosophy and education of ancient Rome during the lifetime of the elder Cato, and, in modern times, during the revival of letters and the subsequent rise of the Baconian induction. It is impossible, indeed, for any great movement of thought to find acceptance without its telling to some

extent on every department of the body politic. Its influence on the ideas entertained as to the education of the rising generation must be, above all, distinct and emphatic. Every philosophical writer on political science has recognised this, and has felt the vast significance of the educational system of a country both as an effect—the consequence of a revolution in thought—and as a cause, a moving force of incalculable power in the future life of a commonwealth. Thus it was that the Humanistic movement which preceded and accompanied the Reformation of religion shook to its centre the mediæval school-system of Europe; and that subsequently the silent rise of the inductive spirit began to subvert its very foundations.

Bacon, though not himself a Realist in the modern and abused sense of that term, was the father of Realism. It was this side of his teaching which was greedily seized upon, and even exaggerated. Educational zeal now ran in this channel. The conviction of the Churches of the time, that one can make men what one pleases (by fair means or foul), was shared by the innovators. The method which could conquer all knowledge could also train the knowing powers and mould the whole man. He did not look to a criticism of mind for the unity he was in search of, but to nature. By education, rightly conceived and rightly applied, the fervent successors of Bacon dreamed that they could manufacture men; and, in point of fact, the Jesuits had shown that a good deal could be done in this direction. The new enthusiasts failed to see that the genius of Protestantism is the genius of freedom,

and that man refuses to be manufactured except on suicidal terms. He must first sacrifice that which is his distinctive title to manhood—his personality. That the prophets of educational Realism should have failed to see this is not to be laid at their door as a fault: it merely shows that they belonged to their own time and not to ours. They failed then, as some fail now, to understand man and his education, because they break with the past. The record of the past is with them, as it was with the Baconian realists, merely a record of blunders. The modern Humanist more wisely accepts it as the storehouse of the thoughts and life of human reason. In the life of Man each individual of the race best finds his own true life. This is modern Humanism—the Realism of thought. Let us not, however, confound Bacon with his bastard children in these days. He would not have acknowledged them.

Let us at the same time freely grant that it is to the Sense-realists of the earlier half of the seventeenth century that we owe the scientific foundations of educational method, and the only indication of the true line of answer to the complaints of the time.

RATKE. BORN 1571. DIED 1635.

Ratke's interest was not, like Bacon's, exclusively confined to the higher education. As a Lutheran Evangelist, it was the education of the people that stirred his enthusiasm: and yet he is in direct descent from Bacon in two essential respects—*Method* (the new method of science and *therefore* of education), and *Encyclopædism*.

These conceptions he transferred to the education of children. He was also, in the pedagogic field, the true successor of Luther as well as of Bacon.

Wolfgang Ratke or Ratich was born at Wilster in Holstein in 1571. He was a man of restless activity, betaking himself, after going through the usual course at the Hamburg Gymnasium and the University of Rostock, both to England and Holland for the further prosecution of his studies. He returned from England in 1604, at the age of 33. The first book of the *Advancement of Learning* had appeared in 1603, the year before Ratke left England, and the second part appeared in 1605. The *De Sapientia Veterum* appeared in 1609. Other treatises of Bacon which might have stimulated and guided Ratke were not published till the middle of the 17th century. The only exception was the *Novum Organum* in 1620, and the *De Augmentis* in 1623, and the *New Atlantis* in 1627. But it was in 1612 that Ratke made his first educational proposals, and we must conclude, therefore, that it was the *Advancement of Learning* alone which could have directly influenced Ratke¹. While the first to give effect to Baconian views in the field of education this was not, to any appreciable

¹ Doubt has recently been thrown on the visit to England. Before Ratke left England, Bacon had written his *Portus Temporis Maximus*, his *Cogitationes de rerum Natura*, *Cogitationes de Scientia Humana*, *De Interpretatione Naturae Prooemium*, but none of these were published till long after, and there is no evidence so far as I know that Ratke had any literary connexion of a personal and private kind with Bacon. He could not accordingly have been influenced by these Essays.

extent, due to the influence of Bacon's works, but to his sharing Bacon's spirit.

Ratke was a youth of ardent temperament, of omnivorous intellectual appetite, and quite abreast of all the learning of his time. He had ruminated much on the new method of observation and induction, and was a Modern in the strictest sense of that term. As has been the case with many philanthropic enthusiasts, the school, and education generally, engaged his attention—not, however, for its own sake only, but because he believed that reform in the School carried with it reform in the State, and that a uniform system of education would produce uniformity in civil and ecclesiastical life, put an end to strife and dissension, and, by harmonizing belief, promote the peace of nations.

He had, however, it seems to me, no such strong desire to revolutionize the *subjects* of instruction as to reform method; or rather to introduce method where there was none. To Latin, Greek, Hebrew, etc., he assigned as high a place in the curriculum of instruction as was in those days common. True he advocated instruction in 'things' and the subordination of form to matter. But it is mainly as an apostle of Method inspired by the ideas of which Bacon was the prophet that he stands prominently forward in the history of education. These ideas belonged to the age, and Bacon was merely their chief apostle. Ratke aims at making them of practical effect in the training of the young. In this practical application of the Baconian conception he was also Baconian; for Bacon had always in view the

betterment of man's condition by knowledge. To carry out Ratke's practical aims it was manifestly essential that the vernacular language of each country should be taught and be the starting-point for the teaching of foreign tongues. How else could a large proportion of the population get access to knowledge at all? Because of this we may truly say, that Ratke was an able, and by no means uninfluential, promoter of the idea of nationality.

Having long ruminated over the subject of education generally and its relation to the social and political condition of Europe, he finally formulated his main principles; and in 1612 he presented to the German Electoral Diet in Frankfurt a memorial in which he 'undertook with God's help for the service and welfare of the whole of Christendom' to furnish guidance for the following objects:—'1st, how Hebrew, Greek, Latin, and other languages may be easily learned and propagated in very short time both by old and young; 2nd, how, not only in High-German but also in other languages, a school may be established in which all the arts and faculties may be thoroughly taught and propagated; 3rd, how in the whole Empire an uniform language, an uniform government, and lastly, also, an uniform religion may be easily introduced and peacefully preserved.' He laid down thirteen brief propositions. I omit these here because a fuller statement of his principles will be found in the sequel.

When Ratke's method of instruction was submitted for the judgment of Professors at Giessen we find it

commended: and in giving that opinion we have the following utterance, which is interesting to us 300 years later:—‘There is a specific Art to which every one who proposes to teach may adapt himself so that a man should not carry on the work of instruction according to his own fancy and opinion of what is right, or in dependence on his natural discretion and natural ability, but should discharge the work of instructor in accordance with the art of instruction; just as he who will speak correctly has to regulate himself by grammar or the art of language, he who will sing rightly must regulate himself in accordance with Music or the Art of Singing.’ This Art, they go on to say, has its assured principles and certain rules no less than other Arts, and these are ‘to be taken out of the nature of the intellect, memory, senses, nay, out of the whole man as also out of the characteristics of the several languages, arts and sciences.’ The Giessen Report was made by Professors Helwig and Jung at the instance of the Landgraf Lewis of Darmstadt, and was entirely in commendation of Ratke’s methods¹. So with the Report of Professor Grauer of Jena.

Ratke in the true spirit of the Lutheran reformation aimed at making education universal. He was an enthusiast, and, it would appear, a somewhat overbearing enthusiast; but his educational aim was laudable and also, generally speaking, his methods were sound. In truth so unquestionably was he on the right track that his leading principles seem to us now-a-days to be very

¹ Subsequently Helwig wrote a separate treatise on the question.

much of the nature of truisms—to the student of educational theory at least. His mind was governed by two phrases: '*Vetustas cessit, ratio vicit*' and '*Per inductionem et experimentum*¹ omnia,' both of which he used as descriptive of his own discoveries and method. Many of his principles are now the common property of all educators. We must bear in mind that in Ratke's time vernacular tongues were not taught save in a few town schools, Latin occupying nearly the whole field of education. Knowledge of nature and of the things of common life were never given in the schools, while the grammar of foreign tongues, especially of Latin, though much simplified, still bristled with rules and abstract generalizations, even all the details of grammatical exceptions and peculiarities being learned before the pupil had encountered them in any author. The Humanistic movement had expended itself and fallen back into formalism and pedantry.

We may then with great advantage take special note of Ratke's principles without attempting to enter into a detailed criticism of them, for time has substantially justified them, and they meet us again in fuller development in the pages of his successor. A full exposition of his system he seems never to have published. It is to his admirers that we know most of Ratichianism.

¹ By this he meant the founding of all knowledge on investigation as opposed to Authority.

*General Principles*¹.

1. 'Everything according to the order or course of nature. Since nature uses a specific order proper to herself, by which the understanding of man comprehends everything, regard must be had to this, in the art of teaching; for all non-natural and violent or forcible teaching and learning is harmful and weakens nature.

2. 'Not more than one thing of the same kind at the same time. Nothing is a greater hindrance to the understanding than to undertake to learn many things together and at once. It is as if one should undertake to cook, pap, fruit, meat, milk and fish in the same kettle. But things should be taken up orderly, one after another, and one thoroughly dealt with before proceeding to the next.

3. 'In each language, one author should be thoroughly studied and out of him the language should be taught. When he is well learned, and, as it were, well swallowed down, others may be read.

4. 'One should undertake nothing new until that which precedes it has been comprehended thoroughly and sufficiently for all purposes.

5. 'One thing often repeated. It is incredible what may be accomplished by the frequent repetition of one thing. For this reason it is that only one and the same material is to be handled, in all lessons, both forenoon and afternoon. For what is often repeated will become more deeply and correctly impressed upon the

¹ From Von Raumer's *History of Education*, but rearranged.

understanding. But if one goes over one thing once, and immediately goes on to another, and so to many things of different kinds all mixed, none of them will rightly adhere, and the understanding will be confused, loaded and weakened.

6. 'Everything first in the mother tongue. For there is this advantage in the mother tongue that the scholar has to think only about the thing he has to learn; and need not trouble himself about the language of it. Besides, if knowledge useful and necessary in common life were put into German and learned in it, everyone, whatever his business, could acquire a much better knowledge of it, so that he could better guide himself in all sorts of things, and better judge of them: How important this would be in religion and government, and in human life generally, will easily be imagined if we reflect what a miserable condition of ignorance and inexperience now prevails. Out of the mother tongue into other languages.

7. 'Everything without compulsion.

(a) 'Boys ought not to be whipped into learning or for the sake of learning. By compulsion and blows youths are disgusted with their studies, so that study becomes hateful to them. Moreover, it is contrary to nature. For boys are accustomed to be flogged for not remembering what has been taught them; but if you had taught them rightly, they would have remembered it and would not have needed the blows.' And that they should atone for your errors, because you did not use the right method of teaching, is too great an injustice.

Also, the human understanding is so made that it must have pleasure in learning what it is to remember; and this pleasure you destroy with your anger and blows. But as to what belongs to morals and virtue, *that* has its decree, viz.: "Foolishness is bound up in the heart of a child, but the rod of correction will drive it far from him," as Solomon says.

(b) 'The pupil should not be afraid of the teacher, but should hold him in love and reverence. This follows of itself from the foregoing. For if the teacher rightly exercises his office it will not fail but that the boy shall take up a love for him and for his studies.

'The teacher must do nothing but teach. To maintain discipline belongs to the scholars . . . so that the pupil cannot contract antagonism to his teacher, but may love him more and more, which is of great avail in learning.

8. 'Nothing must be learned by heart [i.e. by rote]. *Reason:* It is a compulsion of nature; violence is done to the understanding; and accordingly experience shows us that any one who applies himself much to learning by heart loses much in understanding and intellectual keenness. For if the understanding is occupied with the word, it has not room rightly to consider the thing. It is unnecessary, too, and can be superseded by better means; that is to say, when a thing has been well impressed upon the mind by frequent repetition, the memory of it will follow of itself without any pains.

9. 'Uniformity in all things. In all languages, arts, and sciences, there must be uniformity both as to the

method of teaching, book used and precepts given, as far as possible. The German grammar, for instance, must agree with the Hebrew and the Greek, as far as the peculiarities of the languages will permit. For this is a valuable help to the understanding, . . . and gives clearness when one sees how one language agrees with others and differs from them.

10. 'First a thing in itself, and afterwards the *way* of the thing. No rule should be given before the material for it—the author or the language—has been given. This appears entirely absurd, but experience shows that it is entirely true. For what can one effect in any language who has read nothing in any author of it, though he be all stuffed full of rules? He must at last come to this, that either in one author or in many, one after another and with frequent repetition, he learns finally to understand the rules and make them useful. What need, therefore, had he to plague himself in vain beforehand with the rules? Rules without material confuse the mind. Let any one remember for himself whether, all his life long, he has found in his reading all the examples he was obliged to learn with great pains in the grammar....Get your corn before you trouble yourself about a sack. Get money before you buy a purse to put it in. Rules are not of use for a preparation nor for a guide; but for the fixation of what has been learned....

'A basis of material must have been laid in the mind before the rules can be applied to it.'

11. 'Everything by experience and investigation of parts.

‘The Latin aphorism is clearer: *Per inductionem et experimentum omnia*.

‘No rule or system is admissible which is not thoroughly investigated anew and rightly founded upon proof, whether or not many or all have written about it or held so and so. For it is assured certainty which is needed; and this can by no means be founded upon authority. In this way we know that we cannot be wrong. No authority is admissible simply as such, unless cause and ground are given. Nor has established prescription any validity, for it gives no certainty.’

After having failed to carry out his plans in Augsburg, whither he had been invited in 1614, an opportunity of trying his system was given to him by Prince Louis of Anhalt-Köthen and Prince Ernest of Weimar. He owed this chance to the Duchess Dorothy of Weimar. At Köthen in 1619 he was furnished with all needful appliances: but partly through religious animosity, partly through the opposition of those who are always suspicious of the new, and partly also, I suspect, because he did not succeed, the experiment broke down. No wonder he failed: he had 500 children made over to him to start with, and had a temper which prevented the cordial co-operation of his assistants. He was thrown into prison and compelled to sign a paper before his release, admitting that he had undertaken more than he could fulfil. He and his followers and admirers, however, still continued to advocate the new Pedagogic Evangel, but he himself did little after this. He found a refuge

at Rudolstadt under the protection of the Countess Anna Sophia, who learnt Hebrew from him. He died in 1635 at the age of 64.

Without attempting to illustrate the practical applications of Ratke's methods (a practical application not always, it may be said, logically following from his own principles) we may quote a brief statement of his method of teaching German—as the native tongue of course—in the school at Köthen.

‘In the first place he required that the teacher of the lower class *should talk much* with the children and take pains with their pronunciation. They were then taught their letters. When they knew their letters, the teacher read the book of Genesis through to them, each chapter twice over, the children following with eye and finger. Then the teacher began the chapter again and read about four lines only, which the children read after him. When the book had been worked over in this way, the children were required to read it through without assistance. Reading, once secured, the master proceeded to Grammar. He explained e.g. what a substantive was and then showed instances in Genesis, and next required the children to point out others. In this way Grammar was verified throughout from Genesis, and the pupils were exercised in declining and conjugating words taken from the book.

‘In teaching a foreign tongue such as Latin, he began with a book, preferring Terence; and having read the selected play *first in German*, proceeded to translate the Latin to the pupils, who then repeated what they had heard. The play was gone over several times, Ratke thoroughly holding by the rule (subsequently laid down by Milton) as to “thoroughly lessoning” some one book—a practice which Jacotot also strongly advocated. Grammar was carefully taught after the play had been read and largely on the basis

of the play itself. Conversation was also practised almost from the first. Industrious reading; continual conversation; thorough Grammar—these were the three practical instructions to teachers.’

That too much was expected from the Ratichian system is certain; but in its aims and principles it was sound so far as it went, and when we consider its historical relations we must recognize Ratke’s originality, freshness, and even audacity. He finds the instruction of youth in the hands of men who had never given one thought to methods of instruction, or ever felt the moral responsibilities of their task. The school was a place in which children were assembled for the purpose of learning by heart dreary generalizations of grammatical rules so constructed as to cover the whole field of grammar, including irregularities and peculiarities. From this exercise they were transferred to the reading of Latin authors. It at first sight strikes us as remarkable that boys should have acquired under such a system any knowledge of Latin at all; but this is probably explained by the fact that they were constantly at their Latin books, little else being taught, and that Latin—as yet the literary language of Europe—was frequently spoken in the schools, the practice of the tongue thus supplying the defects of the method.

But Ratke and the Ratichians aimed not only at simplifying instruction in Latin and other tongues, but, as I have already indicated, at subordinating the study of that language and of all languages to the realities of knowledge which they contained. In the present day

the followers of the Baconian school, if strictly consistent would confine linguistic instruction to modern languages, because it is in them that all science and a great part of philosophy can now best be studied. Latin and Greek would be relegated to the region of specialties. The general public, they would say, can get all they require by means of translations. To linguistic analysis and all that is understood by "pure literature" they would assign a subordinate place. I imagine most educational thinkers, while repudiating these modern utilitarians, would yet give their support to the sense-realists of the 16th and 17th centuries to this extent that the materials of school instruction should always *include* subjects that educate by bringing boys into intelligent relations with their material environment. To this extent sense-realism has gained the day; but it can never drive the humanistic from its position as the central subject of all education. The extreme view was well expressed by Helwig, who was one of the most eminent of the Professors who reported on Ratke's system: 'We are in bondage to Latin,' he writes; 'the Greeks and Saracens would never have done as much for posterity if they had spent their youth in acquiring a foreign tongue. We must study our own language and, then, sciences. Ratke has discovered the Art of Teaching according to nature. By his method languages will be quickly learned so that we shall have time for science: and science will be learned even better still, as the *natural* system suits best with science which is the study of *nature*.'

The next important innovation which received a powerful impulse from Ratke was the study of the mother tongue. We can easily understand that, in an age when Latin Grammar, and at a later stage of the curriculum, Greek, and at a still later, Rhetoric with its pedantic refinements of abstract terminology, constituted the chief material of education, the introduction of the study of the mother tongue was a cardinal point with the Realists. Their ambition, as compared with that of their successors in these times, was modest enough. For their Realism consisted not so much in the introduction of *realistic* studies, as in giving reality and meaning to the studies then in vogue by the introduction of a *method* which would truly exercise the faculties of the young. In the opinion of the whole thinking world their cause, in so far as it may be identified with Method, is now in theory triumphant; whether it be so in the *practice* of schoolmasters is quite another question.

The defects of the Ratichian scheme consist, in its too purely intellectual character, its belief in the efficacy of mere knowledge to educate, its suppression of linguistic discipline and of literature, and, generally, in its want of philosophic depth and psychological knowledge. But these are defects that were inseparable from the historical position of Ratke. He had to strike at the most conspicuous errors of his time and these were connected with the subjects, the aims and the method of study. Acknowledged defects occupied his mind to the exclusion of other considerations.

Let us remember to Ratke's credit that by the

introduction of good methods he also hoped to improve the depraved *discipline* of the schools and to attract to learning rather than to coerce. So anxious was he to preserve the purity of the relation between master and scholar that one of his plans was to leave the discipline entirely in the hands of a separate authority whom he denominated the 'scholarch.' The state of discipline—the misery to which young humanity was in those days subjected—may be gathered from a remark by Balthazar Schupp (born 1610): 'I must confess that owing to the vexatious diffuseness and intricacy and the scholastic tyranny which prevails in our schools many a fine spirit is deterred from study. The ancient Latins named a school *ludus*, many schoolmasters, however, have made it a *carnificina* (a place of torture). If one should, perchance, pass by a place where such a scholastic tyrant rules, *ubi plus nocet quam docet*, one may hear a pitiful howling and lamentation as if Phalaris himself held his court there, and as if it were a den of the Furies rather than a habitation of the liberal arts. If I had a dog that I loved I would not hand him over to these beasts, much less a son!'¹

The wide interest which the aims and labours of Ratke excited among learned men and crowned heads is scarcely intelligible to us in these days; but there can be little doubt, I think, that this was largely due to the fact that he represented in the important field of education the new spirit of philosophy which was represented by the great name of Bacon, advocated popular

¹ *Encyclo.* p. 775.

education and at the same time proclaimed a remedy for universally felt defects in method. But his intellect was original and suggestive rather than constructive. In the most eminent of his successors, Comenius, we have similar educational principles advocated, expounded and organized into a system.

I would conclude with merely pointing out that the true fundamental convictions of all Sense-Realists are first, a belief in *method*; secondly, that languages can be much more quickly acquired than people imagine; thirdly, that we are to teach language and languages for the sake of the *things* which they contain. To this extent all men whose opinions are worth anything are now Realists, but not therefore *Sense-Realists*; for as Humanists, they also believe in language, literature, and style for their own sake both as a discipline and a culture of the highest kind and as of profound and supreme ethical significance in the education of youth.

Ratke's life was practically a failure. He did not succeed in his scholastic work, and this is to be ascribed to the following causes—(1) His character; (2) the too purely theoretical groundwork of his scheme; (3) the jealousy and opposition of others; (4) his wrong application of his own principles; (5) his want of that instinctive feeling for the *art* of teaching which was conspicuous in his greater successor Comenius.

The torch that fell from Ratke's hand was seized, ere it touched the ground, by John Amos Comenius, who became the head, and still continues the head,

of the Sense-realistic school. The works of Comenius have a present and practical, and not merely an historical significance, for there are few of the now recognized rules of Method which will not in substance be found in his writings. The ardour of both Ratke and Comenius was conspicuous, and in the Lutheran and Moravian alike it was sustained by a religious aim.

NOTE.

Among the writings of Ratke and the Ratichians are the following :

1. *Encyclopædia universalis pro Didactica Ratichii.* Cothensis 1619.
2. *Grammatica universalis pro Didactica Ratichii.* Cothensis 1619.
3. *Methodus institutionis nova . . . Ratichii et Ratichianorum edita studio M. Johannis Rhenii.* Lipsæ 1626.
4. Memorial, welches zu Frankfurt auf dem Wahltag anno 1612 den 27, 28 Mai dem deutschen Reich übergeben. Frankfurt town archives.
5. Kurtzer Bericht von der Didactica, oder Lehrkunst Wolfgangi Ratichii. Professors Helwich & Jung. (Giessen 1614.)
6. Bericht von der Didactica, oder Lehrkunst Wolfgangi Ratichii. Jehna 1614, signed by Professors Grawer, Brendel, and Wolff.
7. Bericht vom neuen Methodo : by John Kromayer. Weimar 1619.

LIFE AND WORKS OF COMENIUS.

JOHN AMOS COMENIUS (Komenski) was born at Nivnitz, a village of Moravia,¹ on the 28th of March 1592. His father was a miller. The family belonged to the sect of Reformed Christians known sometimes as the Bohemian, more generally as the Moravian, Brethren. This sect of Christians has never attained to great dimensions, but it has been distinguished by an activity and zeal which have given it, notwithstanding the fewness of its members, a conspicuous place among religious communions. Although generally recognised as Lutherans, they connect themselves by direct ecclesiastical descent with the Bohemian Reformer Huss, and have always preserved a distinct organisation of their own. At the present day they number, it is believed, only about 5000 communicants in Europe, and 7000 in America. They acknowledge an episcopate, but their bishops have little power. Their chief characteristic seems always to have been a certain simplicity of faith, combined with an earnest personal

¹ Some say at *Comna* or *Comnia* (near Brünn), whence the surname Comnenius or Comenius. The family name was in German *Töpfer*, i.e. Potter. Comnia is in long. about 18° E. from Greenwich, lat. 49°. Gindely simply says in the vicinity of *Ungarisch-Brod*. At the University of Heidelberg he was entered as a native of Nivnitz, a little village about a league from Ungarisch-Brod.

piety and a practical realisation of the brotherly relation in which all the members of a common Christian Confession ought to stand to one another.

Comenius is usually called an Austro-Sclav; that is to say, a Sclav born within the sovereignty of Austria. His family, and he himself consequently, spoke the Bohemian or Czech tongue, which is a West-Sclav dialect, and is considered to be the best of all the Sclavonic forms. Huss may be said to have done for this dialect what Luther afterwards did for German.

The young Comenius was born in troublous times. The European disturbances and complications arising out of the advance which the thought of man had made in the fifteenth and sixteenth centuries—generally denoted by the terms ‘Revival of Letters’ and the ‘Reformation of Religion,’ or more generally ‘the Renaissance,’—had already been in active operation for seventy years, and Comenius was growing old when the close of the Thirty Years’ War gave Europe peace, after having made a great part of it a desert. Austria was at that time the great German power. Prussia had no political existence, while Poland was a large and influential kingdom, including much of what is now Russia.

Comenius’s parents died while he was still a child, and he was accordingly handed over to guardians. There appears to have been a little money left by the father—enough to help in the education and maintenance of the son. He received, however, only the limited amount of instruction obtainable in one of those elementary

people's schools, which were the fruit of the Reformation—the school of Strassnick. This amounted to reading, writing, a knowledge of the Catechism, and of the smallest beginnings of arithmetic. He had reached his sixteenth year without having entered on the study of Latin—at that time still the indispensable instrument of all literature, and of international communication among the learned. We are not to conclude from this that his guardians neglected his education. The community of which he was an orphan child had to raise up pastors for their own instruction, and this necessity, independently of other considerations, would have led to the fostering of any boyish promise shown by young Comenius. It is probable that he was a child of slow growth. It was certainly not till his sixteenth year that he began to feel and to show a desire for the life of a scholar. There was probably an advantage in this. Unvisited by ambitions which could carry him beyond the narrow limits of his own quiet community, his mind must have had time slowly and surely to imbibe the teachings of the simple Brotherhood to which he belonged, and to be thoroughly imbued with their earnest spirit. We see the effects of this upbringing conspicuous throughout his whole life. Simplicity, zeal, piety, self-sacrifice, humility, are always present. The whole tenor of his life confirms his own confession that he was by nature of a retiring disposition, had more of fear than of hope in his constitution, that the part of innovator was one alien to him, and that he was keenly alive to the fact that those who think they have got some new light

are often merely pursuing *ignes fatui*. 'Nor yet,' he adds, 'do I desire to belong to that class of men who cling to the old and the customary, spite of the indications of God Himself, Reason, and Common Sense.'¹

Out of the Moravian evangelical soil he grew, and a Moravian in heart and soul he remained to the end. It is important to note this. We have already pointed out in the Introduction that the educational motive was in the first Reformation age—that of Luther and Melancthon,—partly literary or Humanistic, but chiefly religious or theological: in the second Reformation age, to which Comenius belonged, the intense conflict of opinion between the new and the old faith—made keener by the reaction to Catholicism under the influence mainly of the Jesuits—had driven the Humanistic element to the wall, and the theological aim in education now almost wholly obscured the literary. The torch of reason, lighted in the schools half a century previously, was now darkened by the smoke of theological contentions and disastrous wars. Comenius was, above all things, a genuine representative of the evangelical spirit; he was not afraid of science—far from it: he endeavoured to unite science and theology,—but he did not fairly appreciate Humanism, and accepted the products of the genius of past ages only in a half-hearted way. His eyes were turned to the present and the future.

At sixteen Comenius went, or was sent, to a Latin school, and in 1612, when he was twenty years of age, we find him at the College of Herborn, in the duke-

¹ *Lecturibus*. vol. i.

dom of Nassau, pursuing his theological studies under Professor Alsted, afterwards Professor of Theology and Philosophy at Weissenburg, and to whom he was considerably indebted in the formation of his own educational views. To the lateness of the age at which he began Latin we probably partly owe Comenius's early insight into the defects of educational methods. He was old enough to criticise, while submitting to, the scholastic discipline and defective modes of procedure, of which he was, with others, the victim. There is no reason to believe that his school was worse than schools elsewhere at that time, and of these he says that 'they are the terror of boys, and the slaughter-houses of minds,—places where a hatred of literature and books is contracted, where ten or more years are spent in learning what might be acquired in one, where what ought to be poured gently is violently forced in and beaten in, where what ought to be put clearly and perspicuously is presented in a confused and intricate way, as if it were a collection of puzzles,—places where minds are fed on words.' Well might Professor Lubinus of Rostock say that the instruction and discipline of schools seemed to have been the invention of some wicked spirit, the enemy of the human race. 'Millibus e multis,' he exclaims, 'ego quoque sum unus, miser homuncio, cui amœnissimum vitæ ver, florentes juventutis anni, nugis scholasticis transmissi, misere perierunt. Ah, quoties mihi postquam melius prospicere datum, perditæ ætatis recordatio, pectore suspiria, oculis lacrymas, corde dolorem excussit. Ah, quoties me dolor ille exclamare coegit—

'O mihi præteritos referat si Jupiter annos,'

Before Comenius left school, Ratich, of whom we have already spoken, was at work; and it was in 1612, when Comenius was still at Herborn, that the public document issued by the Universities of Jena and Giessen, commenting on Ratich's proposed innovations, first came under his notice.¹ The Ratichian scheme, on which specially the University laudation was pronounced, was printed under the following title: *Wolphgangi Ratichii de Studiorum rectificanda methodo Consilium*.

Comenius was profoundly attracted by the new educational movement.

After a year or more spent in travel, during which he resided at Amsterdam and studied at Heidelberg, he returned to his native Moravia in 1614. Being now twenty-two years of age, and being still too young for the ministry, he was appointed Rector of the Moravian school at Prærovium (Prerau), near Olmütz, where he at once endeavoured to introduce improved methods of instruction and a more humane discipline.

'Ten years,' he says,² 'are given to the study of the Latin tongue, and after all the result is disappointing. Erasmus, Vives, Luther, Sturm, Frisch, Sanctius, Domavius, have all complained of this. Boyhood is distracted,' he goes on to say, 'for years with precepts of grammar, infinitely prolix, perplexed, and obscure, and for the most part useless. Boys are stuffed with vocabularies without associating words with things, or indeed with one another syntactically.' It had been

¹ Preface to vol. i.

² Preface to first edition of the *Janua Linguarum*.

hoped that the substitution for barbarous Latinity of good authors, such as Terence, Cicero, Virgil, and Horace—the work of the Humanists,—would cure the universal evil by teaching boys the Latin tongue by means of its purest writers. But this had failed, partly because of the unpropitiousness of the time, but chiefly because the secret of education lies in method, and in the master who wields it. No attempt had been made to secure either sound method or good masters. What else but failure could be expected?

At Prerau Comenius began by simplifying the Latin Grammar, and wrote an elementary book for his pupils, which was afterwards published at Prague in 1616 (*Grammaticae facilioris praecepta*).

In this year he was ordained to the pastorate, but whether this caused him to give up the school does not appear.¹ He was not appointed to any special charge till 1618, when he was set over ‘the most flourishing of all the churches of the Moravian Brethren, that of Fulneck,’ near Troppau. Along with his ministerial charge, he had the superintendence of a school recently erected; and he now began to consider more fully the subject of instruction, and to put his thoughts on paper.² Here too he married, and for two or three years spent a happy and active life, enjoying the only period of tranquillity in his native country which it was ever his fortune to experience. For the restoration of a time so happy he never ceased to pine during all his future wanderings.

¹ Dedication to *Schola Ludus*, vol. iii. p. 831.

² Preface to vol. i.

The Thirty Years' War broke out, and in 1621 Fulneck was taken by the Spaniards, and all the property of Comenius destroyed, including his library and manuscripts.¹ For the next three years Comenius seems to have resided, along with several other Moravian pastors, under the protection of Karl von Zerotin, a wealthy Moravian, and while there wrote a book entitled *The Labyrinth of the World and the Paradise of the Heart*, an allegorical writing on the vanity of earthly things.² In 1622 he lost his wife and only child. In 1624 he and his fellow-pastors were compelled to leave the protection of Zerotin, and thereafter, evading as best they could the persecution of the Jesuits, they wandered through various parts of Moravia and Bohemia, occasionally visiting their communities secretly, and preaching the Word and administering the Sacraments.

In July 1627 the evangelical pastors in Moravia and Bohemia were formally proscribed by the Austrian Government, acting under the instigation of the Jesuits. Some took refuge among the Bohemian mountains with Baron Sadouski von Slaupna. To one of the pastors who took refuge there—John Stadius by name—the Baron intrusted his three sons for their education. For the benefit of the tutor, and at his request, Comenius wrote some rules of method. In the autumn of that

¹ Seyffart says that on this occasion he lost also his wife and two children, but Comenius himself does not mention this in his Preface to vol. i. Seyffart has doubtless other authority for what he says. I confine myself solely to what can be ascertained by collating Comenius's own writings.

² Printed at Lissa in 1631.

year he paid a visit to Wilcitz, not far off, to look at the library there. Among the books, he unexpectedly met with the treatise of Elias Bodinus, recently imported from Germany, and was fired with the ambition to produce a like work in his own Bohemian tongue. In this ambition he was sustained by the approval, and indeed solicitations, of his fellow-refugees, who were convinced that he had much to say that would be of value to schools and schoolmasters. While engaged in this didactic work, he was disturbed by a new edict requiring all the evangelical pastors to renounce their faith, or finally leave the country. Churches and schools were ruthlessly destroyed. Comenius from his retreat was a witness from time to time of the acts of the persecutors, and was overwhelmed with grief. He still, however, desired to live within reach of the brethren of his community, and did not leave the mountains, where he thought he might possibly escape observation. His active and practical mind began at once to consider how he should proceed to restore religion and piety should he ever be free again to work for his native country. His didactic studies suggested to him that the great agency for a future renovation lay in schools, and he consoled himself with this reflection, and with forming sanguine schemes for the future. His sole desire now was to devote his life entirely to the young, should it please God to restore him to his country, and by the institution of schools, by supplying them with good books, and with a simple and lucid method, to build up, more surely than before, learning, virtue, and

piety. Meanwhile by secret communications with his brethren he tried to sustain their sinking spirits. The persecution, however, waxed hotter, and finding it impossible longer to continue in his concealment, he and his companions fled, dispersing in different directions. Comenius made for Poland, which he had once before visited on a secret mission, having been sent thither by the Moravian Brethren—probably in order to ascertain if they could find an asylum in that country. He betook himself to the town of *Lesna* (Lissa, Leszno), in Posnania, and obtained employment as a teacher in the Moravian Gymnasium there—apparently as Rector of it.¹ The Count of Lissa (Rafael) afforded protection to the persecuted brethren. His scholastic engagements, and the desire to do his duty in an efficient way, gave a fresh impulse to his didactic studies. He began to reconstruct his methods from the foundation, and to give them a philosophic basis and a logical coherence.

Not only had the general question of Education engaged many minds for a century and more before Comenius arose, but the apparently subsidiary, yet all-important, question of *Method*, in special relation to the teaching of the Latin tongue, had occupied the thoughts and pens of many of the leading scholars of Europe. The whole field of what we now call Secondary Instruction was occupied with the one subject of Latin ; Greek, and

¹ In the *Dictionnaire de Pédagogie* his scholastic function is described as being that of organiser of the education of the Moravian Colony only. That his duties were of a more general kind is clear from his own writings.

occasionally Hebrew, having been admitted only in the beginning of the sixteenth century, and then only to a subordinate place. This of necessity. Latin was the one key to universal learning. To give to boys the possession of this key was all that teachers aimed at until their pupils were old enough to study Rhetoric and Logic. Of these writers on the teaching of Latin, the most eminent were Sturm, Erasmus, Melanchthon, Lubinus, Vossius, Sanctius (the author of the *Minerva*), Ritter, Helvicus, Bodinus, Valentinus Andreae, and, among Frenchmen, Cœcilus Frey.¹ Nor were Ascham and Mulcaster in England the least significant of the critics of Method. Comenius was acquainted with almost all previous writers on education, except probably Ascham and Mulcaster, to whom he never alludes. He read everything that he could hear of with a view to find a method, and he does not appear ever to have been desirous to supersede the work of others. If he had found what he wanted, he would, we believe, have promulgated it, and advocated it as a loyal pupil. That he owed much to previous writers is certain; but the prime characteristic of his work on Latin was his own. Especially does he introduce a new epoch in education, by constructing a general methodology which should go beyond mere Latin, and be equally applicable to all subjects of instruction.

Before bringing his thoughts into definite shape, he

¹ Frey published at Paris in 1629 an educational treatise entitled *Ad divas scientias, artesque, et linguas sermonesque extemporaneos nova et expeditissima [via]*.

wrote to all the distinguished men to whom he could obtain access. He addressed Ratich, among others, but received no answer; many of his letters also were returned, because the persons addressed could not be found.¹ Valentinus Andreæ wrote to him in encouraging terms, saying that he gladly passed on the torch to him. His mind became now much agitated by the importance of the question, and by the excitement of discovery. He saw his whole scheme assuming shape under his pen, and was filled, like other zealous men, before and since, with the highest hopes of the benefits which he would confer on the whole human race by his discoveries. He resolved to call his treatise *Didactica Magna*, or *Omnes omnia docendi Artificium*. He found a consolation for his misfortunes in the work of invention, and even saw the hand of Providence in the coincidence of the overthrow of schools, through persecutions and wars, and those ideas of a new method which had been vouchsafed to him, and which he was elaborating. Everything might now be begun anew, and untrammelled by the errors and prejudices of the past. Some scruples as to a theologian and pastor being so entirely pre-occupied with educational questions, he had however to overcome.² ‘Suffer, I pray, Christian friends, that I speak confidentially with you for a moment. Those who know me intimately, know that I am a man of moderate ability, and of almost no learning, but one

¹ Among his correspondents were Sigmund Evenius, Abraham Mencil, Paliurus, Jonston, Mochinger, Docem, George Winkler, Martin Moser, and Niclassius.

² *Lectoribus*, vol. i. p. 7.

who, bewailing the evils of his time, is eager to remedy them, if this in any way be granted me to do, either by my own discoveries or by those of another—none of which things can come save from a gracious God. If, then, anything be here found well done, it is not mine, but His, who from the mouths of babes and sucklings hath perfected praise, and who, that He may in verity show Himself faithful, true, and gracious, gives to those who ask, opens to those who knock, and offers to those who seek. Christ my Lord knows that my heart is so simple that it matters not to me whether I teach or be taught, act the part of teacher of teachers, or disciple of disciples. What the Lord has given me I send forth for the common good.’ His deepest conviction was that the sole hope of healing the dissensions of both Church and State lay in the proper education of youth. The *τεχνὴ τεχνῶν ἀνθρώπου ἀγειν* of Gregory Nazianzen was with him a favourite quotation. At the same time, he did not profess, as we have said, to supersede all others: on the contrary, he truly and wisely says, ‘*Artem artium tradere operosae molis res est, exquisitoque eget iudicio; nec unius hominis sed multorum, quum unus nemo tam sit oculatus cujus aciem non subterfugiant plurima.*’

When he had completed his *Great Didactic*, he did not publish it, for he was still hoping to be restored to his native Moravia, where he proposed to execute all his philanthropic schemes; indeed, the treatise was first written in his native Slav or Czech tongue.¹

¹ Found in the archives of Lissa in 1841, and republished in its Czech form in 1849 by a Bohemian Society.

While thus engaged in working out his theory and method of education, Comenius had been searching for some elementary Latin reading-book, which might introduce boys easily to the use of the Latin tongue.

In addition to the defects already universally recognised in the teaching of Latin, Comenius pointed out that, even supposing the usual classical authors were read and mastered, a boy would not then know the Latin words expressing the things and ideas of his own time. 'Finally, if so much time is to be spent on the language alone,' he says, 'when is the boy to know about things—when will he learn philosophy, when religion, and so forth? He will consume his life in preparing for life.' Some epitome of the language is wanted, in which the words and phrases will be reduced to one body, as it were, and in this way much time saved in acquiring them. For, as Isaac Habrecht truly said, one would learn to know all the animals of the world more quickly by visiting Noah's ark than by traversing the world and picking up knowledge as we went.

To meet this want, a member of the Irish College of Salamanca (Bateus by name) had written a *Janua Linguarum*, comprising in one lesson-book all the more usual words, and these connected into sentences so constructed that no vocable occurred more than once, except such indispensable words as *sum*, *et*, *in*, etc. This book was in Latin-Spanish, and was shortly after, in 1615, published in Latin-English in London. Two years after Isaac Habrecht of Strasbourg published a

Latin-Spanish-English-French edition, and so made it quadrilingual, and on his return to Germany added a German version, strongly commending it as an excellent means of learning a language. The work was frequently republished in many parts of Germany, was introduced into many schools, and ultimately, in 1629, appeared in eight languages.

At first Comenius hailed this book with pleasure, but after carefully studying it, came to the conclusion that it did not justify its title; and this, *first*, because it contained many words beyond the capacity of the young, while omitting many in daily use; *secondly*, because the words, which were used only once, were used in one signification only, whereas they constantly, in native authors, have more than one meaning, and thus pupils are misled; and *thirdly*, because, where one signification is alone given, it ought always to be the primary one, which in the book in question was not the case. There were other objections to the book: the sentences did not contribute to the moral instruction of youth, and were clumsy, and, indeed, even often destitute of meaning.

‘My fundamental principle—an irrefragable law of didactics—is,’ he says, in speaking of his own *Janua*, ‘that the understanding and the tongue should advance in parallel lines always. The human being tends to utter what he apprehends. If he does not apprehend the words he uses, he is a parrot; if he apprehends without words, he is a dumb statue. Accordingly, under 100 heads, I have classified the whole uni-

verse of things in a manner suited to the capacity of boys, and I have given the corresponding language. I have selected from Lexicons the words that had to be introduced, and I include 8000 vocables in 1000 sentences, which are at first simple, and thereafter gradually become complex. I have used words, as far as practicable, in their primary signification, according to the comprehension of the young, but have had to seek for modern Latin words where pure Latin was not to be had. I have used the same word only once, except where it had two meanings. Synonyms and contraries I have placed together, so that they may throw light on one another. I have arranged the words so as to bring into view concords and governments and declension. The vernacular text (Czech or Bohemian) I have printed separately on this occasion, as it would be useless to many whose judgments on my effort I desire to have. An index of the words (not however, absolutely necessary) will be afterwards added; also a brief treatise on homonyms, synonyms, etc., and a short, compendious, simple, and easy grammar—all of which, comprised in one volume, will be a little treasure-house of school-learning.'

Three years were spent on the *Janua* alone, and yet Comenius was far from thinking the work perfect: he considered he had only led the way for others. He hoped also himself, from time to time, to improve the book.

He called this little book a 'Seminary of Tongues and all Sciences,' because equal care had been given to *things* and *words*. He desired to introduce some beginnings

and clear perception of things, and at the same time to lay the foundations of learning, morals, and piety.

Speaking generally, we may say that Comenius's aim was—*first*, to simplify and graduate; *secondly*, to teach words through things; *thirdly*, to teach things through words. The book was a very remarkable innovation on the then existing school text-books; but, notwithstanding this, or because of it, when he published it in 1631, at the urgent solicitation of his friends, and before, in his opinion, it was perfected, it achieved an immediate and enormous success. 'People,' he says,¹ 'seemed to vie with one another in producing editions of it.' It was translated into Greek, Bohemian, Polish, German, Swedish, Belgian, English, French, Spanish, Italian, Hungarian, Turkish, Arabic, and into a language which he calls Mogolic, 'and which,' he says, 'was familiar to the populations of India.' He next, in 1633, published his *Vestibulum*, which was intended to serve as an easy introduction to the *Janua*.

In 1632 there was convened a synod of the Moravian Brethren at Lissa, at which Comenius (now forty years of age) was elected to succeed his father-in-law Cyrillus as Bishop of the scattered brethren—a position which enabled him to be of great service, by means of correspondence, to the members of the community, who were dispersed in various parts of Europe. Throughout the whole of his long life he continued this fatherly charge, and seemed never quite to abandon the hope

of being restored, along with his fellow-exiles, to his native land—a hope doomed to disappointment. In his capacity of Pastor-Bishop he wrote several treatises, such as a *History of the Persecutions of the Brotherhood*, an account of the *Moravian Church-discipline and Order*, and polemical tracts against a contemporary Socinian.

Meanwhile his great Didactic treatise, which had been written in his native Czech tongue, was yet unpublished. He was, it would appear, stimulated to the publication of it by an invitation he received in 1638, from the authorities in Sweden, to visit their country and undertake the reformation of their schools.¹ He replied that he was unwilling to undertake a task at once so onerous and so invidious, but that he would gladly give the benefit of his advice to any one of their own nation whom they might select for the duty. These communications led him to resume his labour on the Great Didactic, and to translate it into Latin, in which form it finally appeared.²

In education Comenius was a Sense-Realist—the first great and thoroughly consistent Realist. Von Raumer says:—‘He received his first impulse in this direction, as he himself relates, from the well-known Spanish pedagogue Ludovic Vives, who declared himself against Aristotle, and demanded a Christian instead of a heathen mode of philosophising.’ ‘It is not disputation

¹ Preface to vol. i.

² I cannot find the precise date. In the *Dictionnaire de Pédagogie* it is stated that the work, though completed at the time stated in the above, was not published till 1657. I think this is a mistake.

which leads to any result,' said Vives, 'but the silent observation of Nature. It is better for the scholars to ask questions and to investigate than to be disputing with each other.' 'Yet,' says Comenius, 'Vives understood better where the fault lay than what was the remedy.'

Comenius received a second impulse from Thomas Campanella, who, however, did not satisfy him. 'But when,' he says, 'Bacon's *Instauratio Magna* came into my hands—a wonderful work, which I consider the most instructive philosophical work of the century now beginning,—I saw in it that Campanella's demonstrations are wanting in that thoroughness which is demanded by the truth of things. Yet again I was troubled, because the noble Verulam, while giving the true key of Nature, did not unlock her secrets, but only showed, by a few examples, how they should be unlocked, and left the rest to future observations to be extended through centuries.' He goes on, in the preface to the *Physics*, from which these utterances are taken, to say that he is convinced that it is not Aristotle who must be master of philosophy for Christians, but that philosophy must be studied fully according to the leading of sense, reason, and books. 'For,' he continues, 'do *we* not dwell in the garden of Nature as well as the ancients? Why should we not use our eyes, ears, and noses as well as they? And why should we need other teachers than these our senses to learn to know the works of Nature? Why, say I, should we not, instead of these dead books, lay open the living book of Nature, in which there is much more

to contemplate than any one person can ever relate, and the contemplation of which brings much more of pleasure, as well as of profit?' It is this realism which explains his school-books and also his method. *

It was natural that the strong realistic impulse should travel beyond the sphere of schools, and cause men to dream of great things. The *Advancement of Learning* had filled Comenius, as well as other contemporary men, with hopes of a rapid and unparalleled progress in all the sciences, and a consequent improvement of the conditions of human life. With a view to a thorough co-ordination and universal diffusion of scientific knowledge, he contemplated the issuing of a complete body of science as then understood. To effect this, the combination of many minds, each in its own department, and all under the guidance of some controlling intellect, was necessary. Men were working in various parts of Europe independently of each other, and, the younger men especially, in ignorance of what had been actually accomplished in the sciences to which they devoted themselves. An exhaustive but concise and authoritative statement of all that was known in each department could not fail to be of immense service, and, as Comenius thought, for his mind was always practical, of great influence on the progress and well-being of society. This complete statement of the circle of knowledge he called *Pansophia*, and it was in this direction that his real life-work lay, in his own opinion; his scholastic undertakings being strictly subordinate to the greater task.

Although not prepared to give effect to his views in proper form, he had been working at the Pansophy in the retirement of his study during the years which saw the completion of the first edition of his *Janua* and of his *Great Didactic*. In the department of Science he had already given to the world a treatise on Astronomy and on the reforming of Physics (1633). He had also, by correspondence, interested various learned men in his encyclopædic or pansophic scheme: among others, Samuel Hartlib, the friend of Milton, who was then resident in London, and to whom Milton addressed his tractate on Education.

‘Everybody knew Hartlib,’ says Professor Masson in his *Life of Milton* (vol. iii. p. 193). ‘He was a foreigner by birth, being the son of a Polish merchant of German extraction, who had left Poland when that country fell under Jesuit rule, and had settled in Elbing in Prussia in very good circumstances. Twice married before to Polish ladies, this merchant had married in Prussia, for his third wife, the daughter of a wealthy English merchant of Dantzic; and thus our Hartlib, their son, though Prussian born, and with Polish connections, could reckon himself half-English. The date of his birth was probably about the beginning of the century, *i.e.* he may have been eight or ten years older than Milton. He appears to have first visited England in or about 1628, and from that time, though he made frequent journeys to the Continent, London had been his head-quarters. Here, with a residence in the City, he had carried on business as a “merchant,” with

extensive foreign correspondences and very respectable family connections. . . . But it did not require such family connections to make Hartlib at home in English society. The character of the man would have made him at home anywhere. He was one of those persons now styled "philanthropists," or "friends of progress," who take an interest in every question or project of their time promising social improvement, have always some iron in the fire, are constantly forming committees or writing letters to persons of influence, and altogether live for the public. By the common consent of all who have explored the intellectual and social history of England in the seventeenth century, he is one of the most interesting and memorable figures of that whole period. He is interesting both for what he did himself, and also on account of the number and intimacy of his contacts with other interesting people¹. Hartlib was not slow to be interested in the educational ideas of Comenius, but he was specially inspired by the two leading projects of the time—the Union of Protestant Christendom, and, by help of this, the settlement of nations, and the union of the sciences in a complete encyclopædic form. Comenius, at his request, had sent him a long epistle, setting forth in full his Pansophic project, and this epistle was printed at Oxford in 1637, without Comenius's consent, and widely circulated. The treatise was called by Hartlib *Porta Sapientiae reserata*. It is entitled by Comenius in the List of Contents (*vide* Collected Works) *Prodromus Pansophiae* (Precursor of Pansophy) and in the body of his works, *Pansophiae*

¹ See Note, p. 229.

praeludium, quo Sapientiae universalis necessitas, possibilitas facilitasque (si ratione certa ineatur) breviter ac dilucidè demonstratur. The running head-title of the treatise again is *Pansophici Libri Delineatio*. To meet the objections of critics, Comenius shortly after wrote a brief treatise further expounding his views, entitled *Conatum pansophicorum dilucidatio in gratiam Censorum facta* (1638).

These treatises excited much interest throughout Europe. Adolph Tassius, Professor of Mathematics at Hamburg, wrote to Hartlib¹ saying,—‘A philosophic ardour flames in every corner of Europe, and with it zeal for a better Didactic. If Comenius had done nothing more than scatter such fruitful seeds in the minds of all, he would have done enough.’

The reception accorded to the Pansophic ideas of Comenius was encouraging enough, but it was apparent to all, and to none more than Comenius, that they could be carried out only by a community or college of learned men, and that this college would have to be a permanent institution for the furtherance of science, and for the authoritative promulgation from time to time of the scientific *status quo*. A Collegium Didacticum or Pansophicum was accordingly projected. It might have been urged that the Universities existed for these very purposes, but it is (it appears to me) a mistake to suppose that these institutions had as yet thought of the prosecution of science as the main end of their institution. Except in so far as they were seminaries of ‘Disputations,’ they were to a large extent merely higher

¹ Vol. i. p. 455.

academies for giving instruction to qualify for the various faculties and professions; and to convert them into centres of scientific research and illumination would not have been in those days possible, although it would have been quite in harmony with their original design. It is only in recent times that the purely scientific idea has found its way into the heart of the University system, and that Professors are expected to represent and advance their subject as well as to afford instruction in it to all comers. The combination of the scientific with the teaching function constitutes, indeed, the ideal of a University system. There was, in the beginning of the seventeenth century, no way open to Comenius and his friends save by the foundation of an entirely new institution. For this, money was wanted, and also influential support.

At the urgent solicitation of the sanguine Hartlib, who had been busying himself among members of the Long Parliament, Comenius repaired to London, which he reached on the 22d September 1641. There he found that he had been invited by Parliament itself; but as it was prorogued for a few months owing to King Charles's absence in Scotland, he had to wait. He employed his time well in expounding his views to various people of influence, and on the re-assembling of Parliament he was asked to wait a little longer until a commission of learned men could be appointed to inquire into his proposals. Parliament even went so far as to propose to set apart the revenues and buildings of a college in London, or Winchester, or Chelsea, to

which men might be called from various parts of the world and maintained in residence while prosecuting their learned researches and giving effect to Comenius's great Pansophic scheme. A statement of the revenues of Chelsea College was even placed in Comenius's hands, and he now began to entertain lively expectations that ere long the ideas of the great Verulam would be realised, and a 'universal college opened, solely devoted to the advancement of the sciences.' The general unsettlement of affairs, aggravated by the Irish rebellion and the massacre of the Protestants, did not admit, however, of the carrying out of any peaceful project. The country was on the eve of rebellion, and the leaders in Parliament could scarcely be expected to find time for any save the greatest national and political affairs. Everything was in confusion, and Comenius, deeply disappointed, prepared to return to the Continent.

It was precisely at this moment that he received, from a correspondent and admirer in Sweden, a letter which led him to change his plans. The name of this friend, who plays an important part in Comenius's future life, was Ludovic de Geer, a man of noble family, of considerable wealth, and, happily, also of an enlightened and progressive mind. He was a Dutchman settled in Sweden. He assured Comenius that his personal influence would enable him to promote his views in Sweden (at that time ruled by Christina and the famous Chancellor Oxenstiern), and that he could secure the co-operation of others. In accepting this invitation, Comenius had the approval of his English friends, but as

De Geer had evidently in view the Didactic rather than the Pansophic innovations of Comenius, they protested by anticipation against his being drawn aside from what they considered to be the larger aim to the more restricted subject of school-books.

Comenius left London for Sweden in August 1642 and was kindly received by De Geer at Nordköping.¹ After a few days spent with his host, he was sent on to Stockholm with introductions to Oxenstiern and to John Skyte, Chancellor of the University of Upsala. By both he was treated with respect, and his plans, Pansophic and Didactic, fully discussed. Of his interviews Comenius himself gives an account in the Preface to the second volume of his works. 'For four days,' he says, 'these two men held me in debate, but chiefly Oxenstiern, that eagle of the North (Aquilonaris Aquila), who questioned me as to my principles, both Pansophic and Didactic, with a greater penetration and closeness than had been exhibited by any of the learned with whom I had come in contact. For the first three days Didactic was the subject of his examination, and he brought the interviews to an end with the following remarks: "From youth up I have perceived a certain violence in the customary method of school studies, but I could never put my finger on the place where the shoe pinched. When sent by my King, of glorious memory,² as an ambassador to Germany, I conferred with many learned men on the subject; and when I

¹ On the Baltic, eighty-five miles south-west of Stockholm.

² Gustavus Adolphus.

was informed that Wolfgang Ratich had attempted a reform of Method, I had no peace in my mind till I had the man before me ; but he, instead of a conversation, presented me with a huge book in quarto. I swallowed that annoyance, and having run through the whole volume, I saw that he had exposed the diseases of schools not badly, but as for the remedies, they did not seem to me to be adequate. Your remedies rest on firmer foundations ; go on with your work," etc. To which I replied that in these matters I had done what I could, and that now I wished to pass to other matters. His answer was : "I know that you are undertaking greater things, for I have read the *Prodromus* of your *Pansophia*, and on this point we shall talk to-morrow, for public duties now call me elsewhere." On the following day, when about to examine my *Pansophic* labours, but with a greater aspect of severity, he prefaced his examination with this question : "Can you bear contradiction?" "I can," I replied. "The *Prodromus* was published not by me but by my friends, for the very purpose of receiving opinions and criticisms : and if we admit these from any and every quarter, of whatsoever kind, why not from men of matured wisdom and of eminent judgment?" He then began to speak against the hopes I had conceived of a better state of things as likely to arise from a rightly instituted *Pansophic* study, first making political objections of profound import, and then bringing forward the testimony of Holy Writ, which seems to predict that darkness and degeneracy rather than light and an improved

state of society would prevail towards the end of the world. My replies he received in the spirit indicated by his concluding remarks: "To no one yet, I think, have such things occurred. Stand on these foundations, for either we shall reach a consensus of opinion in the way you propose, or it will be made clear that there is no way. Nevertheless my advice is that you devote yourself first to benefit schools and to make the study of Latin easier, and by that means to prepare a smoother way for the greater things."

The Chancellor of the University added the weight of his advice to the same effect, suggesting that Comenius should move to a locality near Sweden, such as Elbing on the Baltic coast of Prussia. Finding that his friend De Geer was of the same mind, he yielded, in the hope of bringing these troublesome and vexatious toils to a close in a year or two. When he communicated his resolution to his friends in England, he received a strong protest. They complained of his too great facility in yielding to his Swedish advisers, and of his unfaithfulness to the great Pansophic scheme. 'Quo moriture ruis?' wrote Hartlib. 'Minoraque viribus audes?' He was much shaken by these representations—the more, that they supported his own real inclinations. A Swedish remonstrance, however, reached him at Lesna. which finally determined him to go to Elbing and prosecute his Didactic labours. To these he now devoted himself, after first putting to press, in 1643, at Danzig, a treatise on Pansophia, entitled *Pansophiae Diatyposis, Ichnographica et Ortho-*

graphica, a work afterwards republished at Amsterdam and Paris.

When, in his retirement at Elbing, where he was supported by De Geer, he had laboured at his Didactic treatises for nearly four years—‘rolling his Sisyphean stone,’ as he calls it—he again visited Sweden (1646) with his manuscripts, and having submitted them to a commission of three judges, was directed to publish them as soon as he had given them his last touches. Two years, however, of hard labour on the Lexicons and Grammars which were to accompany his books still awaited him, and it was only in 1648 that he was in a position to publish. At this time he returned to his Polish home at Lesna, the proper centre of his episcopal work, and at the Lesna press the fruits of his labours were printed.

A complete list of the works which were the fruit of those six years’ labours will be found at the end of this memoir, under their proper titles. They included the most elaborate of all his treatises on Method, except his Great Didactic, viz., *The Newest Method of Languages solidly based on Didactic Foundations*, and a specimen of a *Vestibulum*, for the final shape of which he refers his readers to the *Vestibulum* afterwards revised at Patak in Hungary: also a new edition of the *Janua*, for which also his readers are referred to its final and completed form as revised at Patak:¹ a Latin-vernacular Grammar

¹ Both *Vestibulum* and *Janua* were, however, printed at Lesna before he went to Patak, as appears from vol. iii. in the Dedicatory Epistle prefixed to the *Schola Ludus*.

for the *Janua*, with appended annotations for the use of teachers—a very clear, complete, and yet brief work compared with the Grammars of the time; and a Latin-German Lexicon, published later, in 1656, at Frankfort, and not included in the collected works, as being too cumbrous. A more advanced school-book, entitled *Atrium Linguae Latinae*, he had just begun when he was called into Hungary, where it was completed. The imperfections of these books, as indeed of all his writings, he is always ready to admit, pleading that no one man could all at once correct the mistakes of the past, place education on a right basis, and furnish the school with proper instruments of teaching.

While still engaged in the completion of the works which belong to this Elbing period, when he was subsidised by De Geer, he received many testimonies from men high in position as to the value of his labours. An interesting correspondence with the Palatine of *Posnania*, ‘Christoph. Opalinski de Bnin,’ himself an author and a vigorous promoter of education in his own country, was lost in the destruction of Lesna by the Swedish army, in 1655. under Charles x—an invasion which destroyed also the gymnasium at Sirakovia, which Opalinski had founded and supplied with translations of Comenius’s school-books.¹

The products of the six years of Elbing industry he dedicated to De Geer

Having discharged his obligations to his Swedish

¹ *Judicia, novaeque disquisitiones*.—Vol. ii. of *Works*, p. 458.

friends in the department of Didactics, he was about now, at last, to apply himself exclusively to the greater Pansophic schemes, and was contemplating future labours in this direction with much complacency when he received a letter from the Prince Sigismund Racocus,¹ and his widowed mother, the Princess of Transylvania, urging him to advise in the reformation of the schools in their country. The requests of mother and son were enforced by communications from theologians, and were favourably entertained by him because of the kindness shown in Transylvania to exiled Moravians. Accordingly, in May 1650, he betook himself to Saros-Patak, a market-town of Hungary, on the Bodrogh, and thence, along with their Highnesses, to Tokay, twenty miles to the north-east. It was in this year that he published his *Lux in Tenebris*, a book on the fulfilment of modern prophecy, and became entangled with one Drabicius,² who gave himself out as a prophet and gained a certain following. This weakness in Comenius may be touched with a gentle hand. His theological writings show that he had strong mystical leanings, and in later life he was a devoted admirer of Madame Bourignon, to whom, indeed, he stood in personal relations.

The form which his scholastic labours now took com-

¹ George I, Ragotzski, Prince of Transylvania. This country was not incorporated in the Austrian dominions till 1699. Hungary accrued to Austria in 1526, and became hereditary in 1687.

² For an account of Drabicius and Kotterus, see Bayle's *Dictionnaire*. Their productions were largely embodied in Comenius's book. The date of the publication of *Lux in Tenebris* is given variously. This is doubtless due to the confounding of the Czech and Latin editions.

bined the Didactic with the Pansophic more fully than hitherto. Being asked to put his idea of a Pansophic school in writing, he printed his *Illustris Scholae Patakinæ Idea*, and thereafter in full detail his *Scholæ Pansophicæ classibus septem adornandæ Delinçatio*. During his residence at Patak, which lasted till 1654, he produced fifteen works, among which were the new editions of the *Vestibulum* and *Janua*, the first edition of the *Atrium*, the famous *Orbis Pictus* (World Illustrated),¹ and the *Schola Ludus*.

These text-books are described in the account of Comenius's educational views which follows this sketch of his life and labours. The most characteristic and important of the works of this period was the *Schola Pansophica*, or *Universalis Sapientiae Officina*, an account of which will also be found in its proper place. He desired to make the new Patak seminary not merely a Pansophic school, but also to give it the character of a Latin state, nay, even of Latium itself. Nothing but Latin was to be spoken.² This was practicable, because he contemplated a college in which all the pupils should dwell together.

His patrons did all they could to fulfil their promises of support. They gave him a collegiate building, and, in addition to this, they purchased the fourth house from the college for the school. Comenius's plan was to buy up the intervening houses, with their gardens, and as many on the other side, so as to provide resi-

¹ Printed at Nuremberg in 1658.

² *Deliberatio de Latio a Tiberi ad Brodrocum transferendo*.

dences for seven masters, and also seven class-rooms. The whole was to be surrounded by a continuous wall, so that a little Latin state (*Latina civitatula*) might be planted, with its own open areas and gardens—all enclosed from the outer world. This was to be a little republic, having its own customs, laws, judges, and senate, and its own chapel and services. The masters were to preside over a large family like fathers, and there, in a course of seven years, beginning at the age of twelve, boys were to be instructed in 'all things that perfect human nature,' and trained to be pious Christians and wise and cultivated men.

The three-class school which formed the lower division of this Pansophic seminary was organised with a view to instruction in Latin along with Real things. The higher classes, up to the seventh, are described elsewhere. They do not seem ever to have been organised.

The Precepts of Manners, collected for the use of youth in 1653, are amusing, and at the same time afford evidence of the exaggerated conceptions which Comenius entertained of the possibilities of education. He believed, in truth, that he could manufacture a man. These also were written for the Patak school.

The *Schola Ludus*, which is a kind of dramatic *Janua Linguarum et Rerum*, was likewise written and printed for the Patak school. An elaborate Latino-Latin Lexicon was also composed during the four years' residence at Patak. Comenius left it behind him in MS., and it was afterwards printed at Amsterdam in 1657.

The Prince Sigismund, unfortunately, died prema-

ture, and those in authority after his death resolved to limit the new institution to the three-class Latin, or philological, school, and for the use of this school the *Vestibulum*, *Janua*, and *Atrium* were printed in Latin-Hungarian. The Patak school was auspiciously opened under three carefully selected masters, and Comenius believed it to be flourishing in 1657, when, at Amsterdam, he was writing his dedicatory epistle prefixed to the *Schola Ludus*. It had, however, suffered from the plague of 1655, which temporarily broke it up. Having accomplished his work of organisation and book-writing, Comenius left Hungary in 1654, pronouncing his valedictory address on June 2d of that year, in presence of a distinguished assembly.¹

In that address he informs his audience that his objects in school reform were—to give compendiums for learning the Latin tongue, which would make the acquisition of it pleasant; to introduce a higher and better philosophy into school work, so as to fit youth for the investigation of the causes of things; and to create a higher tone of morals and manners. To carry out these objects, he had constructed, he tells them, a *Vestibulum* and a *Janua* of the Latin tongue for the first two classes, with their accompanying lexicons and grammars, and an *Atrium* for the third stage, with a more extended grammar, including idioms, phrases, and elegancies, and a Latino-latin lexicon. As to science, arts, philosophy, morals, and theology, he had so con-

¹ *Laborum Scholasticorum Patakini obitorum Coroniso*, vide vol. iii. p. 1041.

structed the above-named books that they contained the foundations of all departments of knowledge; in brief, Pansophia in its elements. He thanks all for their co-operation, and impresses on them, in eloquent language, the duty of maintaining the school, and prosecuting the methods which he had taught them, which he elsewhere sums up in the words, *Noscenda noscendo, facienda faciendo*, or *Autopsy*, looking at things for oneself, and *Autopraxy*, doing or constant practice.

‘Vale Patakina schola!’ he concludes. ‘Vale ecclesia! Vale Patakum ipsum! Valet omnes amici, Comeniique vestri amicam apud vos retinete memoriam, amicis prosequimini votis, etc. . . . Imprimis valet vos dilecti collegae, atque si me Eliam vestrum fuisse credebatis et ob meum a vobis discessum lugetis, ego vos ut meos Elisaeos intueor et vobis de spiritu meo portionem duplam coelitus dari opto; ut publici boni amore et pro illo promovendo laborum tolerantia et ad infirmiores condescendunt progressibus denique bonis ita me superetis quomodo miraculis patrandis Eliam superavit Elisaeus: ad scholam hanc vestram et alias tam sancte sapienterque regendum quam sancte sapienterque scholas Prophetarum rexit Elisaeus!’

It must have been about 1652-53, while still in the midst of his Patak labours, that he lost his best friend and patron, Ludovic de Geer. A long letter of condolence addressed to the son, Laurence, then settled at Amsterdam as Swedish ambassador, concludes the third volume of the Works. In this he recalls the virtues and lauds the character of the father, who was, without

doubt, a man of high public spirit, and of a generous and liberal nature. For eight years he had supported Comenius and his amanuenses, and was prepared, when the opportunity offered, to contribute largely towards the institution of a Pansophic College.

From Patak Comenius went, in 1654, to his former home at Lesna. The war which almost immediately after broke out (1655) involved the whole of Poland, and caused, among other calamities, the destruction of Lesna (1656).¹ He was thus forced to seek for some safer asylum.

In the overthrow of the town, Comenius lost all his property, including his library and manuscripts, which contained the results of the studies which he had undertaken with a view to the great Pansophic book which was the chief aim of his life. Among the mss. was one which, he tells us, he considered the most precious of his possessions ; it was his *Silva* or 'forest' (to use his own peculiar expression) of Pansophic materials, a treasury of definitions of all things, and of axioms, scientific and philosophic, which he had spent twenty years in gathering together. He had not, even then, been prepared with a complete system, but he had in contemplation, and nearly ready, a much more complete treatise than any he had yet issued.

After the ruin of Lesna, he was invited by Laurence

¹ The fate of Lesna was said to have been partly due to a panegyric on Charles Gustavus, King of Sweden, which Comenius indiscreetly published.

de Geer, the son of his former patron, to join him in Amsterdam, there to take counsel as to his future. From the temporary refuge which he had found for his family he was driven by pestilence, and other friends joining De Geer in urging him to make Amsterdam his future home, he yielded, because, he himself says, 'I have all my life long been accustomed to yield to what seemed to be the guidance of Providence.'¹ Comenius was now sixty-three years of age.

To the loss of his Pansophic mss. were now added fresh demands on his time of a strictly scholastic kind, and he had to return 'ad puerilia illa utut mihi toties nauseata Latinitatis studia.' An edition of his *Schola Ludus* was demanded in Holland, and he found so many errors and defects in the version printed at Patak after his departure, that he had to devote a considerable time to emending and printing. Then, it was impossible to escape from the supposed necessity of constructing another elementary book, a sequel to the *Vestibulum*,—to be entitled the *Auctarium*. He was also requested by the Senate of Amsterdam to try his method on two youths. His Latinity also was attacked, and this caused him to write *Pro Latinitate Januae Comenianae Apologia*. These labours, but especially this last treatise, revived an interest in his method in the minds of many public men, and he was asked to put his educational views in the form of an epitome, so that busy men might read them. This gave rise to his *Synopsis Novissimae*

¹ The last Dedicatory Epistle.

Methodi, which, however, he did not think it worth his while to republish in his Works, probably because it is substantially repeated in other treatises.

The publication of his complete didactic works, to which he now addressed himself at the instance of De Geer, and under the patronage of the highest authorities in Amsterdam, led him to take a critical survey of all he had written, that he might confirm, retract, or modify the opinions which he had from time to time given forth. This treatise of retrospect and revision he entitled *Ventilabrum Sapientiae sive sapienter sua retractandi Ars*—‘The Fanner of Wisdom, or the Art of retracting one’s own Opinions.’ This fanner was to winnow away the chaff and leave the solid grain. He quotes Philo in support of this self-criticism: ‘Scientiae finis non contingit hominibus. Nemo enim absolutus est in ulla scientia. Revera perfectiones et vestigia unius sunt (*nempe Dei*).’ He also quotes Aristotle as saying, ‘It behoves a philosopher to forswear even his own dogmas,’ and a Roman Pontiff as remarking, ‘Wretched is that man who is the slave of his own dogmas.’

In the *Didactica Magna*, which contains the systematic development of his principles and methods, he finds that he has nothing to retract, but confines himself to a defence of the Syncretic Method, which is there followed. Comenius recognises three methods of ascertaining and expounding truth,—the Analytic and the Synthetic (which words he uses in our modern acceptance), and the Syncretic. By this last he means

arguing by a method of parallels in nature,—the method of Analogy. He holds that the true character and process of anything in the created world furnishes a line of explanation for other things, which is of the most convincing kind. The stricter view of Analogy which is now accepted was not known to Comenius, although he must have had before him the dictum of the schoolmen: ‘*Similia illustrant quidem, non autem probant.*’

When, in the course of his retrospect, he re-peruses his *Praeludium Pansophicum*, a sense of wasted years oppresses him, and he is again afflicted with grief, because he had, at the urgent entreaty of friends, too readily deserted this the main line of his studies, sacrificing the great ambition of his life to occupy himself exclusively with matters didactic. ‘How badly have I imitated,’ he exclaims, ‘that merchant seeking for good pearls, who, when he had found a pearl of great price, went away and sold all he had, and bought it! Oh wretched sons of light, who know not to imitate the wisdom of the children of the world! Would that I, having once struck the Pansophic vein, had followed it up, neglecting all else! But so it happens when we lend an ear to the solicitations clamouring outside us rather than to the light shining within us.’

The corrections he has to make on his various didactic writings are certainly very unimportant. They all point in the direction of greater simplification, and for this he looks to the labours of his successors rather than to any revision of his own.

About the year 1657 Comenius wrote and published (in the fourth volume of his Works) four treatises, which however constitute one. He desired to present his principles in a brief and condensed, yet systematic way, so that they might be accessible to men occupied with public affairs. The first of these treatises is entitled *De Scholasticis Labyrinthis Exitus in Planum, sive Machina Didactica mechanice constructa: ad non haerendum amplius (in Docendi et Discendi muniis) sed progrediendum*, 'An Issue out of School-labyrinths into the Open, or a Didactic Machine mechanically constructed with a view to no longer sticking fast in the work of Teaching and Learning, but of advancing in them.' Schools, he tells us, are to be compared to labyrinths, infinitely distracting the minds of youth: the thread which is to guide us through the labyrinths is a true and simple method. The sciences and arts and tongues are to be taught, but the precise quantity and goal of teaching are not accurately laid down. The thread of Ariadne—Method—is all-important, because it leads to distinct issues by a proper way. Augustine says, *Praestet pauca scire quam infinita opinari*; Pliny says, *Satius sit minus serere et melius arare*; and again, Seneca, *Melius est scire pauca et iis recte uti quam scire multa quorum ignores usum*. 'Our method,' says Comenius, 'offers few things, but these necessary to life here and hereafter; few things, but these well consolidated by continued exercises; few things, but these having a direct utility.'

As he grew older, and looked back on his past work,

he became more and more convinced that he was right in his aims and methods. He was now sixty-five years of age. His views assumed to his mind a definite and clear shape, and became almost axiomatic. He admits certain errors in the details of working out his views; for example, that his text-books are too condensed, and attempt too much, and that it would be hardly possible to accomplish in three years (the Three-Class philological, or Latin school) all that he once thought might be accomplished within that period; but these faults he considers to be faults of detail, and due to his own culpable neglect of the principles he had himself laid down. Admitting so much, he yet regards his method as so absolute in its character that it may be likened to a machine—a clock, or a ship, or a mill. Set it going, and keep it going, and you will find the result certain. It is really of the nature of a mechanical construction, mechanically constructed. He is never weary of advocating his system. He sums up his principles, and then, with all the ardour of his youth, he afresh proceeds to consider the means by which his great end is to be attained.

The Latin school is to be a college in which nothing but Latin is to be spoken. *Longum et difficile iter per praecepta, usu et consuetudine iter breve et efficax.* He calls the brief treatise in which he advocates the institution of such a college *Latium Redivivum*, and urges the authorities of Amsterdam to institute one.

With such a College he sees his way so to carry out his methods as to justify him in recurring to one of his

old ideas, and comparing his method to a printing-press, which makes the impression of the type on the paper without fail. So will the impression on minds by his method be equally certain. Hence the name of his next paper, *Typographeum Vivum*, or the Living Printing Press. He here compares his method with clocks, ships, agriculture (*Ingenium enim vivus ager est; Disciplinae aratro sementi praeeparandus, Doctrinarum seminibus obserendus, Exercitiorum pluvia, sole, vento animandus*), with the pictorial and sculptural arts, and with architecture, but prefers to dwell on its likeness to the typographic art, not only as to the mode of procedure, but also the result; for whereas in the one case you have books, in the other, every capable pupil properly trained will be a walking library—*odambulans Bibliotheca*.

But the final aim of all this training is moral and religious. Comenius never lost sight of this. As the restoration of man to the Paradise which he forfeited, and to the image of God which he lost, is the aim of the Providence of God in Christ, so the aim of the school is a restoration—a bringing of its work and methods into a harmony with moral and religious aims, and subordinating the school to the Church as a spiritual society. Hence the title of the next treatise, *Paradisus Juventuti Christianae reducendus*. In this treatise he mixes up the spiritual aim of the school with that of a Paradise in the sense of a place that may be made a happy one for boys, and indulges also in many forced analogies between the school and the first Paradise.

Finally, in his *Traditio Lampadis* he solemnly hands over the didactic work of his life to be carried on by others, and commends his labours to God, who had so favoured him as to make him the instrument of sowing the seed of a better time for schools, and to whose blessing he looks for a rich harvest in the future.

Comenius was now sixty-six years of age, and had just revised and completed the issue of his collected Didactic works, extending to four folio volumes. He had now said his last word. We can well believe the simple-hearted and single-minded old Bishop, when he tells us that he had been led by no personal ambition to publish his works, and that he was very far from desiring to derogate from the claims of those writers who preceded him, and to whom he acknowledges his obligations. Nor had his motive been the desire of wealth, for he had sought nothing and gained nothing. He had laboured and written, he says, influenced by the love of God, and stimulated by the exhortations of learned men, solely in the hope of improving the education of youth, and preparing a better future for humanity.

It is not to be supposed that Comenius's relations to his original patron Ludovic de Geer were always pleasant; such relations seldom are. De Geer complained of unnecessary delay, and Comenius had many personal vexations to contend with arising out of his pecuniary dependence. We learn also, from the last

Dedicatory Epistle written by Comenius, and addressed to some of the leading men in Amsterdam, that he had not, even in his old age, escaped the general fate of reformers. While his views on Education had been ardently supported by some of the best men in Europe, that obstructive of all education known as the 'practical teacher,' who is almost always an obscurantist, had been at work. Detraction was busy, and he was accused by the teachers of Amsterdam of 'attacking schools.' To all this his reply was brief. 'I can affirm,' he writes, 'from the bottom of my heart, that these forty years my aim has been simple and unpretending, indifferent whether I teach or be taught, admonish or be admonished, willing to act the part of a teacher of teachers, if in anything it may be permitted me to be so, and a disciple of disciples where progress may be possible. They say that I write *against* schools: nay, it is *for* schools that I speak, and have spoken. I presume our common ends are the same; it is as to methods and ways that we differ.' Malignity even touched the character and motives of the old Bishop. 'I have not, by the grace of God,' he says, 'so spent my life that now in my old age I must avoid the light; nor are the things I have done till now of so little account that I am to keep silence when I am asked to speak. As to the allegation that I have preferred private to public schools, this is incorrect; my writings show this. I have desired to give trouble to none, but rather to lessen trouble. Why then should any delight to molest me? Let me live in tranquillity as long as God wills me to be here! With Thomas à Kempis

I can from my heart and the bitter lessons of experience say, "I have tried all things, nor anywhere have I found peace, save in a little corner and a little book" (*angululo et libellulo*).¹

Of Comenius's domestic life and history not very much is known. He married, as his second wife, the daughter of Joh. Cyrillus, a priest of the Brotherhood and a Senior, apparently about the year 1629. She died in 1648, or the beginning of 1649, after having borne five children—a son, Daniel by name, and four daughters. The eldest daughter, Dorothea, seems to have married Johann Mohtor, a man of good Slovak family, who had been under Comenius's educational supervision at Lissa. The second daughter, Elizabeth, married Figulus, one of her father's *collaborateurs*, and a Moravian pastor.

Comenius continued to reside in Amsterdam, after the publication of his collected Didactic works (completed in the end of 1657), maintaining himself and his family by teaching, and partly, it would seem, supported by the private liberality of the admirers of his life and labours—especially the De Geer family, at whose expense his books were printed. He dedicated his works to the city of Amsterdam, in gratitude for the hospitality its people had shown to him. He lived for nearly thirteen years after this, dying on the 15th of

¹ The attack on Comenius by Nicolas Arnoldus, in his *Discursus Theologicus contra Comenium*, is personal and spiteful. Bayle's treatment of Comenius shows a complete misapprehension of his character.

November 1671, in his eightieth year, and was buried at Naarden. During these concluding years he does not seem to have added to his Didactic writings, but he printed several treatises of a religious character intended to further the promotion of the unity of Protestant Christendom, and continued to maintain by correspondence his connection with the Moravian Brethren, and the superintendence of their affairs. His last publication was a confession, entitled *One Thing Needful*,¹ in which the piety of his heart and the simplicity of his faith are alike conspicuous. In this he thanks God that he had been a man of aspirations, 'for the longing after Good, however it spring up in the heart, is always a stream flowing from the fountain of all Goodness—God Himself.'

Even in the declining years of his laborious life he never for a moment lost sight of his great Pansophic work, which was to place before the world of science and letters the sum of human knowledge in all departments, and was to be a University of scientific investigation. He set himself diligently to replace the materials and MSS. which were destroyed at the sacking of Lesna, and left a large number of papers behind him, enjoining his son Daniel and his old friend and fellow-worker Nigrinus to prepare them for publication. The son seems to have troubled himself very little about the matter, but

¹ *Unum necessarium in vita et morte et post mortem quod non-necessari mundi fatigatus et ad unum necessarium sese recipiens senex J. A. Comenius anno aetatis suae 77, mundo expendendum offert. Terent. Ad omnia aetate sapimus recte.* Edit. Amstelodami 1668. Afterwards republished at Leipzig in 1734.

A translation of the Bible into Turkish also occupied much of his thoughts and time.

Nigrinus worked for eight or nine years at the revision and preparation of the ms., being supported during the task by the liberality of Gerard de Geer. But it does not appear that any Pansophic publication ever saw the light.

‘Comenius,’ says Von Raumer truly, ‘is a grand and venerable figure of sorrow. Wandering, persecuted, and homeless, during the terrible and desolating Thirty Years’ War, he yet never despaired; but with enduring truth, and strong in faith, he laboured unweariedly to prepare youth by a better education for a better future. Suspended from the ministry, as he himself tells us, and an exile, he had become an Apostle *ad gentes minutulas—Christianam juventutem*; and certainly he laboured for them with a zeal and love worthy of the chief of the Apostles.’

WORKS OF COMENIUS.

Comenius wrote various books on Physics and a great many on Theological and Ecclesiastical subjects, in addition to those on Education and on Pansophy. The chief of these were:—

1. The Labyrinth of the World and the Paradise of the Heart. Printed in the Czech language about 1621, but first published at Lesna, in quarto, in 1631.
2. *Historia unitatis fratrum et ratio disciplinæ.*
3. *Physicæ ad Lumen Divinum reformatæ Synopsis.* Lipsiæ 1633, and Amsterodami 1643.
4. *De bono Unitatis et Ordinis, Disciplinæ et Obedientiæ in Ecclesia rectè constituta, vel constituenda: Ecclesiæ Bohemicæ ad Anglicanam Paraenesis.* Amst. 1660.
5. *Lux in tenebris* (a book on the fulfilment of prophecy in modern events). 1650.

6. *Historia Revelationum.*

7. *Unum Necessarium.* Amst. 1668.¹

EDUCATIONAL AND PANSOPHIC WORKS.

These were published at Amsterdam in 1657, in four vols. folio. They are bound in one volume, and extend to 2271 pages.²

In the Dedicatory Epistle, dated 20th December 1657, the author informs us that he had collected all his writings, arranging them in chronological order, at the request of many leading men in the State, and in compliance with a resolution of the governing body (*sacri senatus decreto*). He dedicates his works to the city of Amsterdam in recognition of the hospitable reception it had given him.

The title is.—

J. A. Comenii Opera didactica omnia, variis hucusque occasionibus scripta, diversisque locis edita : nunc autem non tantum in unum, ut simul sint, collecta, sed et ultimo conatu in Systema unum mechanice constructum, redacta. Amsterodami impensis D. Laurentii de Geer excuderunt Christophorus Cunradus et Gabriel a Roy. Anno 1657. 4 voll. fol.

Erster Theil. (Schriften von 1627-1642.) *The Poland Period.*

1. De primis occasionibus, quibus huc studiorum delatus fuit Author, brevissima relatio.

2. Didactica magna. Omnes omnia docendi artificia exhibens.

3. Schola materni gremii, sive de provida Juventutis primo sexennio Educatione.

4. Scholae vernaculae delineatio.

5. Janua latinae linguae primum edita.

6. Vestibulum ei praestructum.

7. Proplasma Templi Latinitatis Dav. Vechneri : et cur opus non processerit.

8. De sermonis Latini studio.

¹ Also, a History of the Persecutions of the Moravians, the precise title of which I do not know.

² The paging 451 to 591, vol. iii., is repeated by the printer.

Vierter Theil. (Schriften von 1654-57.) *The Amsterdam Period.*

1. Vita gyrys, sive de occasionibus vitae, et quibus Autorem in Belgium deferri, iterumque ad intermissa didactica studia redire contigit.

2. Parvulis parvulus, Omnibus omnia, h. e. Vestibuli Latinae linguae Auctarium, voces primitivas in sententiolas redigens.

3. Apologia pro Latinitate Januae Comenianae.

4. Ventilabrum sapientiae, sive sapienter sua retractandi ars.

5. E labyrinthis scholasticis exitus tandem in planum, sive Machina didactica mechanice constructa.

6. Latium redivivum, hoc est, de forma latinissimi Collegii, seu novae romanae civitatulae; ubi latina lingua usu et consuetudine ut olim, melius tamen quam olim, addiscatur.

7. Typographeum vivum, hoc est: ars compendiose et tamen copiose ac eleganter sapientiam non chartis, sed ingeniis imprimendi.

8. Paradisus ecclesiae reductus; hoc est optimus scholarum status, ad primae paradisiacae scholae ideam delineatus.

9. Traditio lampadis, hoc est studiorum sapientiae christianaque juventutis et scholarum, Deo et hominibus devota commendatio.

10. Paralipomena didactica.

Pansophiae diatyposis. Dantzic 1643.

In 1670 Comenius, when (as he states) he was seventy-eight years of age, wrote a short preface to a trilingual edition of the *Janua*—English, Latin, and Greek, in parallel columns—published in London. Some quaint woodcuts of by no means bad execution are prefixed to this edition, which I met with in the Advocates' Library, Edinburgh. The cuts are illustrative of the different departments of realistic study, as then understood. In these we have represented Astronomy, Mathematics, Navigation, Geography, Anatomy, Architecture. One of the anatomical illustrations is a skeleton leaning in a pensive attitude on a table, while one long bony hand rests on a skull.

THE EDUCATIONAL SYSTEM AND
WRITINGS OF COMENIUS.

PART I.

THE GREAT DIDACTIC.

First Section.

PANSOPHY AND THE AIM OF EDUCATION.

THERE can be no doubt that it was chiefly the speculations of Lord Verulam that fired the imagination of Comenius, and led him to conceive hopes of reducing all existing learning to a systematic form, and providing for all the more ambitious youth of Europe, in a great Pansophic College, opportunities for the universal study of the whole body of science. To this universal and systematised learning he gave the name of Pansophia or Encyclopædia. He was filled with high hopes of the benefits which would arise from a revision and arrangement of human knowledge—hopes which he shared with many men of his time, and which it would be rash for us to say were without sufficient foundation.

The title of one of his treatises is ‘A Prelude of Pansophy, in which the necessity of universal wisdom, its possibility and its practicability (if it be approached according to a certain method) is briefly and clearly demonstrated.’ He draws a picture of the confusion

of existing knowledge, and the inadequacy of the treatment of its various departments. He attributes this to the ignorance of those in one place of what had been done elsewhere, and to the too great specialisation of inquirers. The writer on jurisprudence was ignorant, it might be, of philosophy and physics, the writer on physics was ignorant of metaphysics, the writer on metaphysics and ethics ignored physics; and so forth. Hence inadequacy of treatment; hence, too, the fragmentary presentation of all knowledge. To cure this it was necessary that there should be an authorised and systematised view of all learning arranged in a philosophic order. Men who, in the higher departments of education, had been disciplined in this encyclopædia, would have an universal culture that would enable them to prosecute special branches with greater firmness and accuracy. He called on learned men to enable him by their contributions to construct such a book, or series of books. As to method; while the spirit of the Baconian induction was in him, in so far as he based knowledge on observation and on advancing from particulars to generals, he had not grasped induction in its true significance. For, as Bacon himself points out, the senses by themselves are not to be trusted, and the processes of a true investigation are to supplement, correct, and verify them.

As all knowledge was to lead to God, and to God as revealed through Christ, Comenius spoke of his encyclopædism as a Christian Pansophy, and called the various sections 'the seven parts of the temple of Christian Pansophy.' The first part was to show the necessity

and possibility of the temple and to give its external structure or outline—to be called the *Templi Sapientiae Propylaeum*. The second part was to give the first approach to a knowledge of all knowable things—a general apparatus of wisdom—in which the highest genera and fundamental principles and axioms were to be exhibited, from which, as the primal sources of truth, the streams of all sciences flow and diverge,—to be called the *Porta*. The third part (the *primum Atrium*) was to exhaust visible nature. The fourth (the *Atrium medium*) was to treat of man and reason; the fifth part (*Atrium internum*), of man's essential nature—free-will and responsibility, and the repair of man's will in Christ as the beginning of the spiritual life. The sixth part (*Sanctum sanctorum*) was to be theological, and here man was to be admitted to the study and worship of God and his revelation, that thereby he might be led to embrace God as the centre of eternal life. The seventh part (*Fons aquarum viventium*) was to expound the use of true wisdom and its dissemination, so that the whole world might be filled with a knowledge of God.

This is a sketch of a Pansophic scheme of knowledge and of a corresponding Pansophic University. The same ideas worked out as applicable to a Secondary or Latin School will be found in the sequel under the designation, 'The Inner Organisation of a Pansophic School.'

Comenius was a thoroughgoing Realist in education, but he combined with this a fervent evangelicalism: indeed, his whole purpose was to lead youth to God through *things*—to God as the source of all, and as the crown of knowledge and the end of life.

I have chosen to introduce the educational reader

to Comenius in connection with his Pansophic schemes, because they are the key to his intellectual life and his educational aims. For it will be seen in the sequel that the idea of a Christian Pansophy never deserts him, and that, from his 'mother-school' upwards, his purpose is to give to children and boys the elements of universal knowledge adapted to the various stages of school life. It is as the representative of encyclopædism in education (in his case a Christian encyclopædism), and as the first exhaustive writer on general method, that Comenius claims our attention. As a type of the realistic and encyclopædic school of Educationalists, he will probably never be superseded.

I shall now give an account of those works of Comenius in which he endeavoured to give effect to his Pansophic educational views and his methods.

The 'Great Didactic'¹ (*Magna Didactica*) first arrests

¹ The word is of singular number, and *Arts* is understood. The full title of the book is as follows:—

DIDACTICA MAGNA;

UNIVERSALE OMNES OMNIA

DOCENDI ARTIFICIUM EXHIBENS:

Sive certus et exquisitus modus, per omnes alicujus Christiani Regni communitates, Oppida et Vicos, tales erigendi Scholas, ut Omnis utriusque sexus Juventus, nemine usquam neglecto, Literis informari, Moribus expoliri, Pietate imbui, eaque ratione intra pubertatis annos ad omnia quae praesentis et futurae vitae sunt instrui possit,

Compendiosè, Jucundè, Solidè:

Ubi omnium quae suadentur,

Fundamenta, ex ipsissima rerum natura eruuntur:

Veritas, artium Mechanicarum, parallelis exemplis demonstratur:

Series, per Annos, Menses, Dies, Horas, disponitur;

Via denique in effectum haec feliciter

deducendi, facilis et certa ostenditur.

our attention, because it was put forth as a systematic treatment of the whole question of Education. Here our object will be to make Comenius speak as much as possible for himself.

In his prefatory remarks to the Great Didactic, Comenius tells us that the Didactic Art has to be studied in the interests of Parents, Teachers, Pupils, the Commonwealth, the Church, and Heaven.

‘Quidnam,’ says Diogenes the Pythagorean, ‘est fundamentum totius reipublicae? Adolescentium educatio. Haud enim unquam vites utilem fructum protulerint quae non bene sunt excultae.’ ‘It is our bounden duty,’ he adds, ‘to consider the means whereby the whole body of Christian youth may be stirred to vigour of mind and the love of Heavenly things.’

General Statement of Aim.

I. Man is the last, the most complete, and the most excellent of living creatures.

II. The final end of man lies beyond this life. This life is threefold, viz., Vegetative, Animal, and Intellectual or Spiritual. The first nowhere manifests itself outside the body; the second stretches forth to objects through the operations of the senses; the third is able to exist separately as well as in the body, as in the case of Angels. ‘Jam quia evidens est, supremum hunc vitae gradum a prioribus valide in nobis obumbrari et prae-
pediri, necessario sequitur futurum esse ubi in ἀκμὴν
deducatur.’

III. This life is only a preparation for an eternal life. The visible world is a seed-plot, a boarding-house and training-school for man.

‘As certainly as the period spent in the mother’s womb is a preparation for the life in the body, so certainly is the dwelling in the body a preparation for that life which will take up the present and endure for ever. Happy he who has brought forth from his mother’s womb well-formed limbs: happier a thousand times he who carries *hence* a well-formed soul.’

IV. There are three steps of preparation for Eternity. ‘Se, et secum omnia, nôsse; Regere; et ad Deum Dirigere.’

It is accordingly required of man that—

- (1.) He should know all things.
- (2.) He should have power over all things and over himself.
- (3.) He should refer himself and all things to God, the Source of All.

These requirements are summed up in the words *Eruditio, Virtus seu Mores Honesti, Religio seu Pietas*,—Knowledge, Virtue, and Piety. All else is merely accidental and extrinsic.

V. The seeds of these three (Knowledge, Virtue, and Religion) are in us by Nature, *i.e.* our first original and fundamental nature, to which we are to be recalled by God in Christ.

It is as certain that Men has been born fit for the understanding of things, the harmony of morals, and the love of God, as that there are roots to a tree.

KNOWLEDGE, or *Eruditio*.—God has placed the roots of eternal wisdom in man. He is fit to acquire all knowledge, because he is the image of God. God is omniscient, and the mind of man is like a polished globular mirror hung up in a chamber, which receives the forms (species) of all things. The body, the voice, the vision of man are limited, but the mind is unlimited in its sweep—it is capable of all things.

Again, Man is a microcosm in which are enfolded the seeds of all *things*, as well as of all knowledge. To him, as inhabiting a natural body, are attached emissaries and scouts, viz., his senses of seeing, hearing, smelling, taste, and touch.

There is implanted in man a desire to know, and not merely a tolerance of labour, but an appetite for labour. The senses, *e.g.*, *seek about* for objects.

The mind may be compared to the earth, for does it not receive all kinds of seeds? or, as Aristotle said, to a *tabula rasa*, on which nothing is inscribed, but on which everything *may be* inscribed; or the brain may be compared to wax, on which every form may be imprinted; for which the wisdom of God is to be admired, who has made it, though small, capable of receiving innumerable impressions.

Most fitly perhaps, is the mind to be compared to a mirror, which reflects accurately all that is placed before it.

VIRTUE, or *Mores Honesti*.—The seeds of moral life are connate with man. He is adapted for a *harmonia morum*. In the motions of the soul the principal

wheel is the will. The weights which drive this wheel are the affections and appetites, but the reason is as a movable bolt which opens and shuts the entrance of these, and suspends or directs.

PIETY, or *Religio*.—So also are the roots of religion in man, for is he not the image of God? The soul of man longs after its likeness. God is the end of its striving, and this is the *summum bonum*—a longing not wholly extinguished by the Fall. We are not to forget our restoration in the new Adam. Everything returns willingly to its own true nature, and it is easier for man, by the grace of the Holy Spirit, to be wise, good, and holy than it is for his adventitious depravity to stop his progress.

Nature gives the *seeds* of knowledge, morality, and religion, but it does not give knowledge, virtue, and religion themselves. These have to be striven for. Hence man is truly called *animal disciplinabile*, since he cannot truly become a man except through discipline. Man, then, has to be educated to become a man. Even to use his limbs aright, he has to be educated. The mind, if weak or stupid, we all admit, needs discipline; but this is true even of the capable understanding; for as rich soil, if not rightly tilled, grows weeds and thistles in more than usual abundance, so is it with the man of natural talent.

Education is to be carried out while the mind is yet tender and the brain soft. And in order that the human being may be educated to full humanity, God has given

him certain years of childhood during which he is not fit for active life; and that only is firm and stable which has been imbibed during the earliest years.

The care of children belongs properly to their parents, but they need the help of those specially set apart for education—*preceptores, ludimagistri, professores*—and there is, consequently, a need for schools and colleges. Schools should be instituted in every part of the empire, and the whole of the youth of both sexes should be sent to these. Schools have been truly called *humanitatis officinae* (workshops or manufactories of Humanity), where man may be trained to be—1. A rational creature; 2. A creature lord of other creatures and of himself; 3. A creature which shall be the joy of his Creator.

That only I call a school, Comenius says, which is truly *officina hominum*, where minds are instructed in wisdom to penetrate all things, where souls and their affections are guided to the universal harmony of the virtues, and hearts are allured to divine love,—‘ubi omnes omnia omnino doceantur.’

Luther, in 1525, in his exhortation to the States of the Empire to erect schools, desires, *inter alia*, these two things—(1) That in all cities, towns, and villages schools be instituted to teach all the youth of both sexes; so that those engaged in agriculture and trades might receive two hours’ daily instruction in letters, morals, and religion. (2) That they should be instructed according to some easier method, which would not only not deter from study, but allure to it, so that

they should derive no less pleasure from their studies than from their games.' But even now, 'ubi universales illae scholae? ubi blanda illa methodus?' Even those that exist for the wealthier classes are a terror to boys and torture-chambers of minds. As to moral training and 'manners, even the Universities are bad. And why all this? Because 'de bene vivendo in scholis quaestio nulla movetur.' They have sought only knowledge, not morality and religion.

And how have they sought this? In such a way that they spend five, ten, or even more years over what could be done in one year. What is capable of being instilled and poured into the mind in the gentlest way is violently stuffed in and stamped in. What might be placed perspicuously and clearly before the eyes is presented in an obscure, perplexed, and intricate way.

The mind is nowhere nourished with the true kernel of things, but with the mere husk of words.

As to the study of the Latin tongue—good Heavens! how laborious, how intricate, how prolix! Mere scullions, cooks, and soldiers will learn one, two, or three foreign tongues more quickly than the pupils of our schools will learn Latin only; and these know little of it, and are dependent on their lexicons. This *must* arise from a bad method. Well may the distinguished Lubinus say that, when he thinks of the immense labour, tedium, and loss in the teaching of Latin, he is disposed to think that the method must have been invented by some evil genius—an enemy of the human race. But why multiply testimony? I

myself am an unhappy instance of wasted boyhood and youth—years misspent, the memory of which I recall with tears and sighs. But the past is irrevocable. Let us do better for our posterity.

So much for the general Aim of Education according to Comenius. He now proceeds to treat of Method, taking the operations of external nature as his guide. The parallelism is throughout forced, and often fanciful.

METHOD.

Second Section

THE METHOD OF EDUCATION.

REFORMATION is possible. I undertake an organisation of schools whereby—

(1.) All the youth may be instructed save those to whom God has denied intelligence.

(2.) And instructed in all those things which make a man wise, good, and holy.

(3.) And *that*, as a preparation for life, in such a time as will set him free before he is adult.

(4.) And *that*, without blows, severity, or compulsion, but most lightly, gently, and, so to speak, spontaneously.

(5.) And *that*, in such a way that they shall be trained, not to specious and superficial, but to true and solid learning, and to the use of their own faculties.—not to dependence on others or on mere memory. With like solidity will they be instructed in morality and religion.

(6.) And *that*, so that the course of instruction shall not be laborious, but very easy ; four hours a day being sufficient.

Order it is that is the soul of the world ; order sustains nature in all its parts.

Order too is the eye of the school, and we must take from nature the order of the school.

Our business is to discover from the indications of nature the principles which underlie the answers to the following queries :—

(1.) How life may be so prolonged as to enable us to learn all things.

(2.) How arts may be shortened with a view to rapid learning.

(3.) How we may seize the right occasions for learning so as to learn *Surely*.

(4.) How we may unlock the mind so as to learn *Easily*.

(5.) How we may sharpen the understanding so as to learn *Solidly*.

Omitting other points, let us consider the three problems contained in the words *surely, easily, solidly*—

CERTÓ, FACILÉ, SOLIDÉ.

Certó, or Surely.

I. CERTO, or SURELY.

How are we to teach and learn surely, i.e. so as to be sure of our result?

This is to be done by finding the *modus operandi* of Nature, and accommodating ourselves to that, as follows:¹—

FIRST PRINCIPLE.—*Nature attends to a fit time.*

Birds do not begin the work of multiplying their species in winter. So with other natural operations, such as the growth in a garden; the season determines all. Right in the teeth of this, schools do not choose a fit time for exercising the minds of pupils; and they do not so accurately arrange the exercises as to insure that all things advance infallibly through their own successive steps.

Just as Nature chooses spring as the time of preparation for future products, so the right time is boyhood—the spring of life. The right time of the day is the morning hours, which is the spring of the day; and as to arrangement of studies, it may be said, generally, that nothing should be taught except when it can be comprehended.

SECOND PRINCIPLE.—*Nature prepares material for itself before it gives it form.*

In the school-books, matter does not precede form.

¹ It will be noticed that successive principles yield the same or similar rules. Hence considerable repetition.

In schools also they teach words before things—the mere clothing or husk of words before the reality itself. Then in the study of a language they teach form before things, because they teach rules before words and sentences. They give rules and then examples, whereas the light ought to precede that which it is intended to light up.

In all instruction it is necessary that, having got ready the necessary books and materials: (1.) The understanding be instructed before speech is demanded; (2.) That no language should be learned from a Grammar, but from suitable authors, that real studies should precede organic (formal), and that examples should come before rules.

THIRD PRINCIPLE.—*Nature takes a fit subject for its operation, or at least takes care that it be made fit.*

Wherefore—

(1.) Let him who goes to school remain steadily there.

(2.) Whatever study is taken up for treatment, let the minds of the pupils be predisposed towards it (and prepared for it).

(3.) Let all obstacles be removed out of the path of the pupils.

FOURTH PRINCIPLE.—*Nature does not confuse itself in its works, but advances distinctly to one thing after another.*

Wherefore let pupils be occupied with only one

study at a time ; that is to say, teach only one thing at a time.

FIFTH PRINCIPLE.—*Nature begins all its operations from within outwards, e.g. a tree grows from within, etc.*

Teachers err herein, that instead of diligently explaining and articulating everything, they would acquit themselves of their task of instructing youth, by speaking, dictating, and exercising memory.

Wherefore—

(1.) Let the understanding of things be first formed, then the memory exercised on what is understood, and only in the third place, speech and hand (*i.e.* writing).

(2.) The teacher should attend to every way of opening the intelligence, and must apply them fitly.

SIXTH PRINCIPLE.—*Nature begins all its formation from generals, and thence proceeds to specialise—e.g. it warms and nourishes the whole mass of the egg, and does not form first the head, then the wings, then the feet, but, having warmed the whole, it sends its creative force into the special parts, and there specialises. So, a painter in painting a portrait does not draw first the nose, then the ears, etc., but outlines the whole man on the canvas roughly with chalk, and then proceeds to fill in. So with instruction, the outline should first be given.*

Wherefore—

(1.) From the very beginning of their instruction, the (principles or) essential groundwork of *all* learning should be given.

(2.) Every language, science, or art should first be learned in its simplest rudiments. Thus the idea of the whole, as a whole, will be grasped ; then, more fully, rules and examples should be given ; thereafter, peculiarities and anomalies ; and finally, if necessary, commentaries, etc.

SEVENTH PRINCIPLE.—*Nature does not proceed per saltum, but step by step.* The hatching goes on by insensible degrees. So, a man building a house does not begin from the top but from the foundation, and step by step he rears his structure.

Wherefore—

(1.) The whole sphere of studies should be distributed carefully among the successive classes of the school in such a manner that the earlier study always prepares the way for what is to follow, and, as it were, lights the path to it.

(2.) The time at the teacher's disposal should be carefully distributed, so that its own peculiar task may await every year, month, day, hour.

(3.) This distribution of the time should be most closely attended to, so that nothing may be passed over, and nothing put in its wrong order.

EIGHTH PRINCIPLE.—*Nature, when it once begins, does not stop till it has completed its task.*

Wherefore—

(1.) He who is handed over to the school should be retained there until he is ready to come forth an instructed, moral, and religious man.

- (2.) The school should be in an undisturbed locality.¹
- (3.) What has been laid down to be done should be strictly carried on on the lines laid down, and no gap permitted.
- (4.) No one should be allowed to absent himself on any pretext.

NINTH PRINCIPLE.—*Nature carefully avoids whatever is contrary to its operations or hurtful.*

Wherefore—

- (1.) Permit a scholar the use of no books save those which have to do with his own class.
- (2.) The books should be so constructed that they may with truth be called channels of Wisdom, Morality, and Piety.
- (3.) Dissolute associates in or out of school are not to be tolerated.

II. FACILE, *or* EASILY.

We have exhibited the principles in accordance with which the work can be done with *certainty*. Now we proceed to show that it can also be done easily and pleasantly. This will be the case if we attend to the following ten principles (many of which repeat what has been already laid down).

I. Let the education begin early, before the mind is corrupted.

This belongs rather to the Third Principle.

II. Let it be done with due preparation of the mind.

III. Let it proceed from the more general to the special.

IV. And from the easy to the more difficult.

V. Let no one be weighted with too much to learn.

VI. Let progress be slow everywhere.

VII. Let the intellect be *forced* to nothing save what it spontaneously desires in accordance with its age and with right method.

VIII. Let everything be communicated through the senses,

IX. And turned to present use.

X. Let all things be taught according to one and the same method.

Let us follow the steps of Nature as illustrative of the above principles.

FIRST PRINCIPLE.—*Nature begins from pure elements.*

The egg which is to be hatched is pure. The tender minds we seek to train should be free from distractions and uncorrupted.

Wherefore—

(1.) Let the education of youth begin early.

(2.) Let there be only one preceptor in each subject for each pupil (*i.e.* do not send the child from one master to another in the same subject).

(3.) Before all, let the morals be reduced to harmony under the influence of the preceptor.

SECOND PRINCIPLE.—*Nature predisposes matter so that it shall seek form.*

The bird hatched *desires* to walk and to peck, and finally desires to fly.

Wherefore—

(1.) The *desire* of knowing and learning is to be stirred up in boys in every way. *ἐάν τις φιλομαθῆς ἔσῃ πολυμαθῆς.*—(Isoc.)

(2.) Let the *method* of teaching lessen the labour of learning, so that nothing be a stumbling-block to the pupil and deter from perseverance in study.

This ardour to acquire is to be excited by parents, who should evince their respect for schoolmasters and learning; by teachers, who should be kind, paternal, and ready to commend; by schools, which should be pleasant rooms, well lighted, clean, and adorned with pictures, etc.; by the things which the pupils study, which should be so presented as to attract; by the method, which should be the natural method; and by magistrates, who should be present at examinations and distribute rewards.

THIRD PRINCIPLE.—*Nature draws out all things from beginnings, which in their bulk are small, in their virtue strong.*

Note in connection with this—(1.) That every art be summed up in rules, very short, but very exact. (2.) That every rule be conceived in words as brief as they are lucid. (3.) That numerous examples be given with each rule, so that the applications of the rule, however various, may be clear.

FOURTH PRINCIPLE.—*Nature proceeds from the more easy to the more difficult.*

We find Latin rules taught in Latin—the unknown by the equally unknown, and many other faults which will be amended if

(1.) The teacher speak the same vernacular as the boy. (2.) If all explanations of things be given in a *known* tongue. (3.) If every grammar and lexicon be adapted to that tongue (*i.e.* the vernacular) by means of which the new is to be learned. (4.) If the study of the new tongue advance by degrees—the pupil being taught first to understand, then to write, and finally to speak it (which, being extemporaneous, is the most difficult). (5.) If, when Latin words are given with vernacular, the vernacular words, as being best known, always come first. (6.) If the material of study be so arranged that the scholar learns first that which is nearest, then that which is near, then that which is more remote, and finally that which is most remote (*e.g.* do not seek illustrations from theology or politics, but from things at hand and familiar). (7.) If the senses of boys be first exercised, then the memory, then the intelligence,¹ and finally the judgment. For science takes its beginning from the senses, and thence passes into the memory through imagination, then by induction of singulars an understanding of universals is formed, and finally a judgment as to things understood takes effect, giving the certitude of science.

¹ Intelligence should precede memory, but the term is here used of the generalising power.

FIFTH PRINCIPLE.—*Nature does not overweight itself, but is content with few things at a time—e.g. it does not demand two birds out of one egg.*

SIXTH PRINCIPLE.—*Nature does not hurry itself, but proceeds slowly—e.g. slow is the hatching of the bird.*

Wherefore—

(1.) Spend as few hours as possible in public lessons; four being the right number, as many more being left for private study.

(2.) Fatigue the memory as little as possible, only fundamental things being exacted, all else being allowed to flow freely.

(3.) Proportion all things to the capacity, which, according to the progress of years and studies, will grow of itself.

SEVENTH PRINCIPLE.—*Nature pushes nothing forcibly forward, except what, being already inwardly matured, desires to burst forth—e.g. the bird does not urge its young to fly till their wings are ready.*

Let nothing, then, be done against the grain. The want of desire frequently arises from want of previous preparation and explanation.

Wherefore—

(1.) Let nothing be attempted with youth except those things which their age and ability not only admit of but desire.

(2.) Let nothing be prescribed as a memory-task which has not previously been thoroughly understood.

(3.) Let nothing be prescribed to be done till the

form of it and the rule of imitation have been sufficiently pointed out and impressed.

EIGHTH PRINCIPLE.—*Nature assists itself in every possible way—e.g.* there is vital warmth in the egg itself, as well as in the maternal incubator.

Boys must be so far assisted as to understand what is given them to do. The teacher who demands a task without sufficient explanation and preparation is as cruel as a nurse who would put an infant on the ground and tell it to walk. We must bear patiently with weakness.

Wherefore—

(1.) Let no stripes be inflicted on account of studies : (for if the boy does not learn, whose fault is it save the teacher's, who either does not know how to make the pupil docile, or does not care to do it ?).

(2.) Let what the pupils have to learn be so placed before them and explained that they see it as clearly as their own five fingers.

(3.) And in order that everything may be imprinted the more easily, let the senses be applied to the subject as often as possible—*e.g.* let hearing be joined with vision, and the hand with speech. It is not enough to tell to the ears, but the teacher must present to the eyes, that through them the instruction may reach the imagination. Leave nothing until it has been impressed by means of the ear, the eye, the tongue, the hand. Write up on the walls (or draw) the substance of your teaching. Thus the pupils will also acquire the habit of writing down in their note-books.

NINTH PRINCIPLE.—*Nature produces nothing the use of which is not ultimately apparent—e.g. wings and feet are found to be formed for flying and running.*

Wherefore—

Let nothing be taught except for manifest use.

TENTH PRINCIPLE.—*Nature does all things uniformly—e.g. one bird is produced in the same way as all other birds.*

Wherefore—

(1.) Let there be one and the same method for instructing in all sciences ; one and the same in all arts ; one and the same in all tongues.

(2.) Let there be for all school-exercises the same order and manner of procedure.

(3.) Use the same editions of books throughout.

III. SOLIDE, or SOLIDLY.¹

Few give a solid amount of instruction to scholars. This is a general complaint.

To cure these evils—

I. Let only things likely to be of solid advantage be treated of.

II. All these should be taught without separating any of them from the curriculum.

¹ There is in this chapter a good deal of forcing in order to make it run on ten principles like the preceding. It is enough to enumerate the principles without going into all the details.

III. A solid basis should be laid for each.

IV. That basis should be laid deep.

V. Let everything subsequently aimed at rest on these same foundations.

VI. Wherever distinctions are to be made, let these be distinctly and most articulately made.

VII. Let all studies which follow be founded on those that go before.

VIII. Let all things which as a matter of fact cohere be always connected in teaching.

IX. Let everything be arranged according to its true relation to the understanding, the memory, and the speech.

X. Let everything be firmly implanted by continual exercises.

FIRST PRINCIPLE.—*Nature begins nothing that will be useless.*

Wherefore in schools—

(1.) Let nothing be taught which is not of the most solid utility for this life and the next.

(2.) If some things have to be instilled into youth only for the sake of this life, let them be of such a kind as will not hinder the interests of the eternal life, and as will produce solid fruit for this life.

SECOND PRINCIPLE.—*Nature omits nothing likely to be of benefit to the body it is forming.*

Therefore it is that in schools there must be not merely knowledge, but also morals and piety.

THIRD PRINCIPLE.—*Nature does nothing without a foundation or root.*

Wherefore—

(1.) The love of any studies that are begun should be excited in the pupil.

(2.) The idea (*i.e.* outline or sketch) of the subject to be taught—language or art—should first be given before going to particulars. In this way a foundation is laid in the mind of the pupil.

FOURTH PRINCIPLE.—*Nature sends its roots deep.*

The general idea of the subject to be taught must *therefore* be deeply impressed.

FIFTH PRINCIPLE.—*Nature produces everything from a root ; nothing from any other source.*

Wherefore—

(1.) Let all things be deduced from the unchangeable elements of things.

(2.) Let nothing be learned by authority, but by demonstration, sensible or rational.

(3.) Let nothing be taught by the analytic method only, but rather by the synthetic.

SIXTH PRINCIPLE.—*Nature, the more she uses for which it prepares anything, the more articulately does it differentiate it into parts.*

Wherefore—

Let there be no confusion in instruction.

SEVENTH PRINCIPLE.—*Nature, in each of its works, is in perpetual progress, never halts, and never attempts*

new things, the former things being cast aside, but only continues what has been previously begun, increases it, and perfects it.

Wherefore—

(1.) Let all studies be so arranged that the subsequent things shall be founded in what has preceded, and be strengthened by them.

(2.) Let everything which is presented to the pupil, and rightly understood, be fixed in the memory.

EIGHTH PRINCIPLE.—*Nature binds together everything by continuous bonds.*

Wherefore—

(1.) Let the studies of the whole life be so arranged that they shall be one encyclopædia, in which there shall be nothing which does not arise out of a common root, nothing not in its proper place.

(2.) Let everything that is taught be so strengthened by reasons that no room shall be left for doubt or forgetfulness. And further, let all things be taught through their causes.

NINTH PRINCIPLE.—*Nature preserves, between root and branches, a true proportion in respect of quantity and quality.*

Wherefore—

(1.) Let everything taught be at once a subject of reflection as to its use, lest anything should be learned to no purpose (*i.e.* the root of knowledge must spread out into the branches of its various applications).

(2.) Let everything that is learned be communicated to others, that nothing may be known to no purpose.

TENTH PRINCIPLE.—*Nature develops and strengthens itself by frequent movement.*

There must therefore in everything be very frequent repetitions and exercises. This is pressed strongly by Comenius for various reasons.

Hence—

The significance of the well-known distich—

Multa rogare :—rogata tenere : Retenta docere.
Haec tria discipulum faciunt superare magistrum.

SCHOOL MANAGEMENT IN RELATION TO SURE, SOLID, AND EASY INSTRUCTION.

Comenius next proceeds to give suggestions for *school management*. This was in his case a demand which the reader was entitled to make, because the contemplated course of instruction was encyclopædic, and it accordingly was difficult to see how the work could be done in the ordinary school life. He held that by beginning in due time, by pursuing good methods, and by basing all instruction in language on the Realities of Knowledge, it was possible to carry youth with ease and certainty through a Pansophic curriculum.

The reasons why more rapid progress is not made in schools are, he says, these—(1.) Because there are no fixed goals marking distinctly how far pupils are to be carried in any one year, month, and day. (2.) Because

no way is marked out of infallibly reaching these goals. (3.) Because things that are joined together by nature are not taken up as connected, but separately. *E.g.* Boys are employed in learning to read long before they are taught to write. In Latin, again, boys are required to struggle with the accident and grammar rules, and with mere words without *things*. He then goes on to point out defects as to the inner organisation of schools—the masters, the classes, and the books—in all which animadversions he is undoubtedly right; but as the defects to which he alludes for the most part no longer exist in schools, we may pass at once to the general rules which he lays down.

He maintains that one teacher will suffice for the instruction of any number of boys. It seems to have been the custom to teach boys either individually, or two or three together, in Comenius's time. Comenius was consequently right in maintaining that a considerable number could be taught together in a class. But he places no limit on the number. Our modern experience tells us there is a limit, if the class is to be sufficiently taught. Comenius admits that the teacher of one hundred boys could not personally ascertain whether all did and understood their work; but by arranging them in tens, and putting one of the boys (whose work he had ascertained to be accurate) over each troop of ten, he might check their exercises and report to the master. The troops of ten he calls *Decuriae*, and their captains *Decuriones*.

Then he gives various practical directions for teaching

a large class, most of which are admirable. *E.g.* The teacher must make all attentive to himself, and this

(1.) By always bringing before his pupils something pleasing and profitable.

(2.) By introducing the subject of instruction in such a way as to commend it to them, or by stirring their intelligences into activity by inciting questions regarding it.

(3.) By standing in a place elevated above the class, and requiring all eyes to be fixed on him.

(4.) By aiding attention through the representation of everything to the senses as far as possible.

(5.) By interrupting his instruction by frequent and pertinent questions—*e.g.* Tu aut tu quid modo dixi? etc. etc.

(6.) If the boy who has been asked a question should fail to answer, by leaping to the second, third, tenth, thirtieth, and asking the answer *without repeating the question*.

(7.) By occasionally demanding an answer from any one in the whole class, and thus stirring up rivalry.

(8.) By giving an opportunity to any to ask questions when the lesson is finished.

In the correction of the numerous written exercises which Comenius would give, it would be necessary, of course, to call in the aid of the Decuriones.

Comenius next speaks of the necessity of all boys using the same books and same editions, and the importance of a careful construction of school-books.

He next advocates the necessity of such careful school-order as will insure that the same thing is done by all at the same time.

Then, that all be taught according to the same method.

Next, that few, but select, words be used for the explanation of things.

He next considers how two or three things can be done together :—

(1.) Let words always be conjoined with things. Thereby we shall learn about realities. ‘*Id agendum est,*’ says Seneca, *Ep.* ix., ‘*ut non verbis serviamus sed sensibus.*’ (2.) Let the exercises of reading and writing be always conjoined. (3.) Let exercises in style be not *mere* exercises in style, but in matter, so that, while they exercise the mind, they also attain some solid result. (4.) Let what is learnt by the pupils be again taught by them. (5.) Let the serious things of life be imitated in a sportive way in school-exercises,—*e.g.* rivalries may be instituted in certain departments of knowledge (collecting of plants, etc.), and the pupils who are most successful dubbed Licentiate or Doctor. Again, they may be dubbed, in connection with other studies, Kings, Councillors, Chancellors, Secretaries, and so forth. (6.) Let everything advance step by step. (7.) To prevent all delay and retardation of progress, drop out whatever is irrelevant or superfluous or too detailed.

Third Section.

THE ART OF EDUCATION—*i.e.* THE APPLICATION OF METHOD TO PRACTICE¹.

WE have now given a view of Comenius's Theory of Education, in respect of Aim and of Method. The remaining half of the treatise, though forming a continuation of the parts which precede it, without any indication of a division, is in point of fact the application of the theory of Method to the Praxis, and repetition is unavoidable.

Comenius recognises the labour which his conception of the school and of method demands of the teacher, and desires to show how that labour may be abbreviated and the work made possible. As education was then conducted, the task which Comenius imposed on teachers would certainly have been beyond their powers. Accordingly, he inquires first into the obstructions which so retarded the work of schools, that those who had spent a large part of their lives in them had not even paid their respects to the Arts and Sciences, much less

¹ The division which I have made is not in Comenius, but I think it gives a clearer view of his system.

acquired a knowledge of them. These obstructions are presented as follows, and they are generally merely the negation of the positive rules of method already enforced:—

(1.) There are no fixed goals marking distinctly how far pupils are to be carried in any one year, month, or day.

(2.) No way of infallibly reaching these goals is marked out.

(3.) Things that have a natural connection are not taken up together, but separately—*e.g.* reading without writing, words without things.

(4.) The arts and sciences are treated of in a fragmentary way, and not encyclopædically.

(5.) Different schools have different methods of procedure;—nay, different teachers in the same school follow diverse methods, and even the same teacher will employ different methods in the different subjects which he teaches.

(6.) The prevalence of individual teaching and the want of classification.

(7.) Increase in the number of masters to meet the above objection only increases the confusion.

(8.) Boys are often allowed by their masters to take up what books they please, both in school and out of school, instead of being kept in definite lines with prescribed books. Boys thus get into a state of mental confusion, from which only the more vigorous spirits ever extricate themselves.

In seeking for remedies, Comenius seeks an analogy

in nature, which, though destitute of intrinsic merit, is yet so characteristic of his fanciful mode of procedure that I may give it here.

Take the Sun in the heavens. By the diffusion of his rays he discharges a laborious and infinite function sufficing for all. And how does he work?

(1.) He does not occupy himself with objects one by one—a tree or an animal,—but illumines and warms the whole earth.

(2.) By the *same* rays he lights up all, and discharges himself of all his functions.

(3.) At the same time through all regions he gives rise to spring and summer, autumn and winter.

(4.) He preserves the same order of operation ; as he is to-day, so to-morrow,—as he is this year, so next.

(5.) He produces everything out of its *own* germ, and not from any other quarter.

(6.) He produces all things together which ought to be together.

(7.) He produces all things by their own steps of gradation, so that one thing makes way for another.

(8.) Finally, he does not produce useless things.

In imitation of the Sun and its operation :—

(1.) Let there be only one teacher for a school, or at least for a class.

(2.) In one subject, let there be but one author.

(3.) Let one and the same labour be expended on the whole of the pupils present.

(4.) Let all disciplines and tongues be taught according to one and the same method.

(5.) Let all things be taught from the foundation, briefly and nervously.

(6.) Let all things be joined together in teaching which are in themselves connected.

(7.) Let all things advance by indissoluble steps, so that everything taught to-day may give firmness and stability to what was taught yesterday, and point the way to the work of the morrow.

(8.) Let everything that is useless be eliminated from the teaching.

There is a curious parallelism here attempted between the operations of the sun and of the schoolmaster, but always fanciful, and frequently strained. I have no doubt that the analogies of Nature frequently suggested methods to the mind of Comenius, and on the other hand, that good school-methods suggested to him the modes of operations of Nature as they presented themselves to the non-scientific apprehension of the time.

Comenius now proceeds to apply the above eight principles or rules to school-management, and throws what he has to say into the form of problems to be solved.

FIRST PROBLEM.—*How can one teacher suffice for any number of pupils whatsoever?*

A large number of pupils is in itself an advantage to both teacher and taught, stimulating the former and exciting sympathy in work and emulation in studies. To facilitate the teaching of a large class by one instructor, certain rules, however, must be attended to.

(1.) The whole class should be divided into certain tribes or decuriæ, and over each of these an inspector or decurio should be appointed. (2.) The teacher should teach all at once, and none separately, either in the school or privately—all together and at once (*simul et semel*). For this it is necessary that he possess the art of fixing the attention of all on himself, and of never saying anything except to listeners, and never teaching anything save when all are attending. The decuriones will be a great aid in securing the attention of their various divisions, but the master himself should—

Endeavour always to present some teaching which will please and profit the pupils.

At the beginning of every fresh task, he should prepare the minds of his pupils, by commending to them the new matter, either by showing its coherence with what has already been put before, or by starting such questions regarding it as will show their ignorance, and make them more eager to know.

He should take up such a position, somewhat raised, as will enable him to control the eyes and fix the attention of all on himself.

He should always assist attention by representing what he teaches to the *eyes* of the class.

He should every now and then interrupt his teaching by sudden questions as to what he has just said, or as to the steps by which he has reached what he is telling them.

If he fails to get an answer from the boy of whom he has asked a question, he should leap to the second,

third, tenth, thirtieth, for an answer, *without repeating the question.*

Sometimes, if one or two fail, he should ask the whole class, praising the boy who first answers.

When the lesson is finished an opportunity should be given to the pupils to ask public questions of the master, either regarding the lesson then given, or any previous one.

By following these expedients in teaching, the habit of attention is formed in the pupils, not only for the passing occasion, but for their whole lives.

The objection may be made that this class-teaching is not sufficient: that there must be examination of the individual exercises written, and of the lessons committed to memory; and that for this many pupils demand much time. To this Comenius replies that it is not necessary that all be always heard, nor that all the exercise-books be always examined. The decurions will examine each the work of his own division. The master himself, as supreme inspector, will pick out an exercise to examine here and there, especially directing himself to those whom he distrusts. As to memory-tasks, one, or two, or three should be called upon, all the rest listening, to repeat what has been prescribed. Each need say a portion only. In this way, by the examination of a few in no set order, the master will cause all to prepare their work. So in dictation, call on one or two to read out what they have written in a distinct voice, while the rest look on their own books and correct their own exercises, the master pouncing

down on one here and there to see that the corrections are being honestly made.

In the correction of written exercises more labour seems to be demanded; but here too, following the same line, a plan is found of abbreviating work. In translation exercises, for example, one boy should rise up and challenge an antagonist. When he has risen, the challenger should read his translation, clause by clause, all the rest attentively listening, the teacher, or if not, a decurion, standing by to inspect the spelling. When he has read a sentence, let him pause, and let the antagonist then point out any error he may have noted. Then let the other members of that decuria make their criticisms, and thereafter the whole class, and finally the teacher himself. Meanwhile let all the pupils look at their translations and make corrections, with the exception of the antagonist, who preserves his own exercise unaltered, to be in its turn subjected to criticism. That sentence being thoroughly corrected, go to the next, and so to the end. Then let the antagonist read off his own exercise in like manner, under the inspection of his challenger, who will see that he has made no corrections. Then call out another couple, and so on according to the time available, the decurions taking care that those in their own decuriæ correct their exercises. In this way it will happen that the labour of the master will be saved; that all will be instructed, and none neglected; the attention of all will be sharpened; all will share in whatever is said to one; the variety of phrases *inapplicable* will form and

strengthen the judgment as to the matter of the exercise, and promote facility in the language. A few pairs having had their errors corrected, it will be seen that there are now no more errors remaining. The rest of the time may be given to the class as a whole, for the answering of questions put by the pupils, and for allowing any one to bring forward any turn of expression which he may think better than that adopted.

The above remarks are made with special reference to the version, but they are equally applicable to exercises in Rhetoric, Logic, etc.

Thus Comenius solves the problem how one teacher can suffice for one hundred pupils.

SECOND PROBLEM.—The second rule of procedure yields this question, *How can all be taught from the same books?* By requiring the pupils to have the same editions, the same lexicons, grammar, etc. It is desirable to publish school books which will contain, simply and popularly put, all that it is necessary to teach in school. Comenius advocates the dialogue form for school-books, because they excite the interest and retain the attention better than the didactic form, supporting his preference by the fact that our lives are spent in conversation, and dialogues are easily repeated. He would further paint on the school-room walls the skeleton or outline of the contents of the books in use.

THIRD PROBLEM.—The third rule of procedure yields this question: *How is it possible that all the scholars*

may be made to do the same thing at the same time? By beginning school-work only once a year, and arranging it in such a way that every month, week, day, and even hour, shall have its own proper task.

FOURTH PROBLEM.—The fourth rule yields the following question: *How can all things be taught according to one and the same method?* There is only one natural method for all studies—sciences, arts, and languages,—and this will be shown in the sequel, and has already been laid down in its principles.

FIFTH PROBLEM.—The fifth rule yields the question: *How can the understanding of many things be set forth in few words?* Fundamental things are to be taught, and this not by means of large books or much talk, but by means of well-selected words and principles, and rules easy to be understood, and fruitful in their character. A gold coin is of more value than a hundred leaden ones. As Seneca says, ‘Precepts are to be sown in the mind as seed is sown in the soil, and it is not necessary that they be numerous, but efficacious.’

SIXTH PROBLEM.—The sixth rule yields the question: *How can instruction be given so as to do two or three things at the same time?* A tree grows in every part at once; so with an animal. In school we must imitate Nature, guided by the following general canon:—‘Always and everywhere let the related be taught in conjunction with its correlate’—*e.g.* words with things, reading with writing, etc.

Above all, never teach words without things, even in the vernacular, and whatever the pupils see, hear, taste, or touch, let them name. The tongue and the intelligence should advance on parallel lines. And from this it follows that a boy should never read or recite anything which he does not understand; and it further follows that all authors are to be banished from school except those who give a knowledge of useful things.

So with reading and writing: let boys be taught not merely to read, but to express themselves in writing at the same time—an exercise which is pleasing to them, and very valuable. But the exercises should not be exercises of style merely, but should have reference to the department of knowledge they are studying—*e.g.* histories of the inventors of arts, and the places and times in which arts flourished, or, it may be, exercises of imitation.

Comenius holds also that boys should teach as well as learn, and that sportive imitations of the serious work of life might advantageously be introduced into the school, side by side with serious employments—*e.g.* the boys should be encouraged to form themselves into a semblance of political and social order, with the titles of King, Councillors, Chancellor, Marshal, Secretaries, Ambassadors, and so forth.

SEVENTH PROBLEM.—The seventh rule yields the question: *How can all things be prosecuted step by step?* Comenius here refers the reader to those parts of the

methodology which deal specially with gradual step-by-step progress.

EIGHTH PROBLEM.—The eighth rule yields the question : *How shall we avoid and remove causes of retardation in our progress ?*

The answer to this is, 'By a wise neglect.' It is not the quantity of things known, but the real utility of them, that is of importance. Therefore, the school should neglect whatever is unnecessary, whatever is alien to the pupil or subject of study, and whatever is too detailed. Unnecessary knowledge is all that knowledge which is unnecessary to virtue and religion, and all without which learning is attainable—*e.g.* the names of heathen idols and accounts of pagan rites, and all comic and other writings which are immoral in their character. Alien things are such as are foreign to the natural tendency of the scholar. One boy has a turn for theoretic and another for practical study, one for music, another for grammar and logic, and so on. It is a waste of time to employ a boy in music who is naturally incapacitated for that subject, while he has strong aptitude for another.

Too much detail is also condemned. It is absurd, for example, to occupy classes, which are studying natural history or botany, with all the differences of plants and animals ; or when arts are the subjects of study, with the names of all the tools. The school has to do with the generic, at most with the leading differences ; if these are fully and solidly given, the rest

will be acquired through the occasions of life. Among things too detailed are such school-books as *full* lexicons, which only serve to confuse and overload a boy.

Comenius having dealt thus generally with the Art of School Teaching, next proceeds to apply Method in detail to the teaching of the three branches of all sound education, viz., Knowledge, *i.e.* Sciences and Arts, including Language (*Eruditio*), Morality (*Virtus*), and Piety (*Religio*).

I. METHOD AS APPLIED TO KNOWLEDGE.

(a.) THE SCIENCES.

Science is the knowledge of things—the things of external sight and of internal sight. As for the former are needed the eye, the object, and light, which are the conditions of vision, so for the latter are needed the eye of the mind, an object, viz. all things, and the light of attention. It is essential to a knowledge of the sciences, viz. :—

1. *That the eye of the mind be pure.*

This is a gift of God, speaking generally ; but we have it in our own power not to suffer the looking-glass of our mind to be dulled with dust, and its brightness obscured. The dust referred to is idle, useless, and vain mental occupations. Unless Reason also preside over observation, we shall pick up dust and chaff instead of grain.

2. *It is necessary that objects be presented to the eye of the mind.*

Everything should be presented to as many senses as possible, namely, visible things to sight, audible things to hearing, odorous things to the smelling sense, sapid things to the taste, tangible to the touch, and when things have reference to more senses than one, they should be presented to all those senses. For the beginning of knowledge is from pure sense, not from words; and truth and certitude are testified to by the evidence of the senses. The senses are the most faithful stewards of the memory. Horace truly says (*De Art. Poet.* l. 180):—

‘Segnius irritant animos demissa per aurem,
Quam quae sunt oculis subjecta fidelibus, et quae
Ipse sibi tradit spectator.’

Failing the objects themselves, diagrams and pictures should be resorted to.

3. *There must also be the light of attention.*

Without this objects would be in vain presented; by means of it the learner receives all things with an intelligence alive, and as it were gaping, to receive instruction.

4. *There must be a method of so presenting things that a firm impression shall be made.*

Objects must be placed before the eyes, not far off, but at a fit distance, directly in front, and not obliquely, in such a way that the whole object will be seen all round, then part by part, and from the beginning to the end, in order. Each individual character should be fixed upon till everything has been seized correctly by its differences.

These considerations as to the teaching of the sciences yield nine very useful rules :—

1. *Whatever is to be known must be taught.* Perfunctory or negligent treatment of subjects will not suffice.

2. *Whatever is taught should be taught as a thing present to the pupil, and of a certain and definite use.*

The things around us and their relations to life are to be taught.

3. *Whatever is taught should be taught directly, and not in a roundabout way—i.e. the thing itself, and not elaborate and confused language about a thing.*

4. *Everything should be so taught as to show HOW it is and becomes—i.e. per causas.*

To know a thing in its causes is true science.

5. *Priora should come first, and posteriora next; and, therefore, whatever is presented as an object of knowledge should be presented first generally, and thereafter in its parts.*

6. *All the parts of a thing should be known, even the more minute, none being omitted: also, its order, situation, and connection with other things.*

7. *All things should be taught successively, but only one at a time.*

8. *Each point should be insisted on until it is comprehended.*

9. *The differences of things should be carefully taught, so that there may be a distinct knowledge. Qui bene distinguit, bene docet.* The variety and the truth of things depends on their differences.

It is true that all preceptors are not equally expert

in applying method, and to assist them, therefore, the sciences to be taught should be expounded in textbooks, according to the true method of teaching.

(b.) THE ARTS (*exclusive of Foreign Languages*).

By the Arts Comenius means Reading the vernacular, Writing, Singing, Composition and Rhetoric, Logic or Reasoning. His remarks are, however, applicable to teaching in Technical Schools in the strict and proper sense of the term technical. [By 'Technical' instruction is, in these days, very generally meant instruction merely in the elements of physical science generally; at other times, in the elements of science in specific reference to certain arts or trades; at other times, but this rarely, training to specific arts in workshop-schools.]

How are youth to be trained to the *praxis* of things?

The answer to this is given in eleven canons:—

1. *Let things that have to be done be learned by doing them.*

Mechanics and artists do not teach their apprentices by disquisitions, but by giving them something to do. They are taught to make anything by making it, to paint by painting, to dance by dancing, etc. So we should teach to write by writing, to read by reading, to sing by singing, to reason by reasoning, etc.

2. *Let there always be present to the pupil a definite form and norm of the things to be done.*

The pupil can, as yet, do nothing of himself, and must have something to imitate. To ask a boy to

make straight lines, squares, circles, drawings, etc., without setting examples before him, and without giving him the requisite tools, is cruelty.

3. *Let the use of instruments be pointed out in reality rather than in words; that is to say, by example rather than by precept.*

Our grammars consist of precepts and rules, and exceptions to rules, and limitations of exceptions, so that boys are overwhelmed and stupefied. Mechanics do not proceed in this way with their apprentices, but let them look at the products of the workshop, and put tools in their hands, and train them to imitate their masters, admonishing them more by example than by words if they see them go wrong. So it is also that children learn to walk, speak, run, and play, viz., by imitation. Precepts require application and vigour of mind, whereas the feeblest are assisted by examples. As Quintilian says, '*Longum et difficile iter est per praecepta, breve et efficax per exempla.*'

4. *Let practice begin from the elements, and not from completed works.*

A carpenter does not start his pupil with the building of turrets or citadels, but requires him to hold an axe, cut wood, bore holes, drive nails, etc. So acts a painter with his pupil. Nor do we teach to read by placing a book before a child, but by giving him first the letters, then syllables, then words. In grammar, accordingly, we should give the tyro first single words, then two together to be declined, then simple sentences, then sentences with two and three clauses, till we bring him

to the full period and the complete oration. In rhetoric, we should exercise in synonyms, in attaching appropriate epithets, in varying sentences by periphrasis, and so gradually bring the pupil to the more ornamental parts of style.

5. *Let the first exercises of tyros be in a known subject.*

This has been, in a former part of this treatise, laid down. Pupils should not be burdened with things remote from their age, powers of comprehension, and present condition: this is to cause them to struggle with shadows. That the boy may understand things, take examples, not from Cicero, or Virgil, or theologians, etc., but from things familiar,—his book, clothes, trees, house, school, etc. We in this way connect what has to be learned with what is already known, and make remembrance and the further extension of knowledge in the same direction easy. In rules, the application of a rule being shown from a first, second, or third *known* example, the boy will find it easy to imitate it in all others.

6. *Let imitation be always for a time the direct and close imitation of a prescribed rule; at a later stage the imitation may be freer.*

7. *Let the things which are given as patterns be as perfect as possible, so that we may be able to pronounce him perfect in his art who adequately imitates them.*

This applies, not merely to the perfection of lines, drawings, etc., to be imitated, but also to instruction in rules, which should be very brief, very lucid and intelligible.

8. *Let the strictest accuracy in imitation be insisted on in the first attempts, so that there may not be the slightest departure from the norm.*

This is necessary, because the beginnings are the foundations of all that follows, and any looseness in the foundations will tell throughout. There should be no haste; he gets on fast enough who does not wander from the road.

9. *Let any deviation from accuracy be corrected by the master there and then; but let him add observations by way of rules or directions.*

Arts are to be taught by examples rather than by rules; but very brief and lucid rules, exhibiting what is implicit in the examples, should be given—e.g. from what point to start the task, at what point to aim, in what way to advance.

10. *A perfect discipline in an art consists in synthesis and analysis.*

That is to say, a pupil must first, beginning with the most simple forms, be taught to construct in accordance with a perfect pattern. This synthetic exercise, with the help of such rules as have been formerly adverted to as requisite, having been sufficiently practised, the pupils should be introduced to the analysis of the work of others, that they may see the art in full operation, and discuss the principles which underlie successful work.

11. *Exercises should be continued till the habit of the art has been formed.*

(c.) LANGUAGES.

Languages are taught, not as themselves a part of learning or wisdom, but as the instrument of acquiring learning and wisdom, and communicating them to others. All tongues are not to be learned. This would be as impossible as it would be useless, and interfere with the time due to acquiring a knowledge of things. Necessary languages, accordingly, are alone to be learned,—*first*, the vernacular; *secondly*, the languages of neighbouring nations; *thirdly*, Latin, as the common tongue of the learned. Theologians will study Greek and Hebrew, and physicians Greek and Arabic.

Nor should the whole of any language be learned, but only what is necessary. It is not necessary to learn to speak Greek and Hebrew as if we had to converse in them, but only to learn them so far as is needful for the understanding of what is written in these tongues. The study of languages should run parallel with the study of things, especially in youth, for we desire to form men, not parrots.

From which it follows that words that denote things are not to be learned separately and individually, because things do not exist separately, but are seen as being here or there, as doing this or that, as conjoined with other things. This is the key to the *Janua Linguarum*.¹ In this book, only necessary words are employed, contrary to the practice of some amplifiers of the book, who stuff it with unusual words, and words,

¹ See the chapter under this heading in the sequel.

too, away from the ordinary apprehension of the young. And those make a similar mistake who occupy the minds of the young with great authors such as Cicero, instead of with language that treats of boyish things, reserving adult things for the adult. Knowledge of language advances, like the intellect, step by step; Nature does not proceed *per saltum*, nor does art when it imitates Nature. A boy must be taught to walk before he can be taught to dance. He must prattle before he speaks, and he must speak before he can make an oration. The following eight rules will make the acquisition of languages short and easy:—

1. *Let every language be learnt separately.*

First, the vernacular is to be learned, and then a neighbouring modern tongue, then Latin, and thereafter Greek, Hebrew, etc.: and, to prevent confusion, let them be learned always one after the other, and *not together*. When a firm hold has been got of each, they may, with great benefit, be compared.

2. *Let every language have a definite space of time assigned to it.*

As we must have respect to things, and as the vernacular is more closely and naturally allied with *things* which present themselves gradually to the intellect, it demands more time than any other tongue,—probably eight or ten years; that is to say, the whole of infancy, and part of boyhood. Then should follow a modern tongue, which can be sufficiently acquired in one year; then Latin, which may be despatched in two years; Greek in one, and Hebrew in half a year.

3. *Let every language be learned by practice rather than by precept.*

That is to say, by reading, re-reading, transcribing, attempting imitations by hand and tongue—all as often as possible.

4. *Let precepts, however, aid and strengthen practice.*

This has been adverted to in the last chapter, and is specially necessary in the acquisition of the learned tongues, though applicable also to spoken languages.

5. *Let the precepts of language be grammatical, not philosophical.*

That is to say, let them state the what and the how of a usage, and not enter with subtlety into the why of phrases and forms of syntax. This kind of speculation is philosophical, not philological.

6. *Let the precepts of a new language be first known as differences from languages already known.*

It is not only useless to teach what is common to a new language with one already acquired, but it is confusing and overwhelming. In Greek grammar there is a very great deal which is common to it with Latin, and only those things are to be taught in which Greek differs from Latin, the rest being assumed. A very few leaves will suffice to hold all that is new Greek syntax, and everything will be thus more distinct to the pupil, easier, and more firmly got hold of.

7. *Let the first exercises in a new tongue be about subjects already known to the pupil.*

Not with a view to things, but with a view to the more rapid command of words. The Catechism or

Bible History, for example, where the matter is known and the same words frequently recur, would be good books for the purpose; or the *Vestibulum* and *Janua*.

8. *Let all tongues be learned by one and the same method.*

Comenius next sets forth the different steps in learning a language, and divides the time into four ages :—

The prattling age of Infancy, with its corresponding book—the *Vestibulum*.

The Boy age—the age of speaking correctly, with its corresponding book—the *Janua*.

The Juvenile age—when elegant speech may be acquired, with its corresponding book—the *Atrium* [here called the *Palatium*].

The Virile age—the age of nervous speech, with its corresponding book, being extracts from good authors—the *Thesaurus* [afterwards called the *Palatium*].

The *Vestibulum* should consist of little sentences, in which several hundreds of the more common words should be conveyed, with an appendix of the declensions and conjugations. The *Janua* should contain all the usual words in a language; about 8000 should be given in short sentences naturally expressed, with an appendix of short and clear grammar rules. The *Palatium* should contain treatises on all sorts of things, in every kind of phraseology, with attention to elegance of diction, accompanied with marginal notes on authors from whom passages have been taken, and rules for varying words and phrases in a thousand ways. The

Thesaurus will be composed of the classical authors themselves, with rules for observing and collecting nervous phraseology and varying idioms. A list of authors not read, but who may be afterwards useful, should be added.

Comenius would not put a dictionary of a language into the hands of a beginner, but would have certain subsidiary books constructed for each stage in Latin—a Latin-vernacular and vernacular-Latin vocabulary for those using the *Vestibulum*; an etymological lexicon for those using the *Janua*; a lexicon of phrases, synonyms, etc. (Latino-Latin, Græco-Greek), for those using the *Palatium*; and finally, a *Promptuarium Catholicum* (vernacular and Latin) for those using the *Thesaurus*, and in which everything may be found which will exhibit the resources of the language.

II. METHOD APPLIED TO MORALITY.

As yet Method has been thought of in relation only to knowledge—to science, arts, including language—to which we may apply the remark of Seneca, ‘*Non discere ista debemus sed didicisse.*’ They are in truth only preparatory to the true end, the pursuit of philosophy, whereby we may become elevated, strong, high-minded. We, as Christians, designate this end of education, morality and piety, or virtue and religion, instruction in which has to be introduced into all schools. Sixteen rules for the instilling of morality may be given:—

1. *All the virtues, without exception, are to be implanted in youth.*

This is essential to a harmony of the moral nature —*harmonia morum*.

2. *But, first of all, the primary or cardinal virtues have to be implanted, viz., Prudence, Temperance, Fortitude, and Justice.*

Firm foundations must be laid for a building, that all the various parts may cohere well with the basis.

3. *By learning the true differences of things, and their values, pupils will be instructed in PRUDENCE.*

Sound judgment is the foundation of all virtue. We must know the precise nature of each thing if we are to discern the good from the bad, the desirable from the undesirable.

4. *During the whole period of instruction let the young be taught TEMPERANCE in eating and drinking, sleep and waking, labour and play, speaking and keeping silence.*

The golden rule is *Ne quid nimis*.

5. *Let boys learn FORTITUDE by overcoming themselves; to wit, by checking their desire to run about and play beyond the proper time, or at the wrong time; by restraining their impatience, their grumbling, their anger.*

Man is a rational animal, and he must be guided by reason if he is to be truly king over his own actions. But inasmuch as all boys are not fully capable of reasoning, they will be taught self-command by being accustomed to do the will of another rather than their own, by promptly obeying, in all things, those above them.

Under Fortitude we include an honourable frankness of speech and tolerance of labour.

Ingenuous frankness is acquired by frequent conversation with honourable men, and by doing in their sight what has been ordered. Aristotle so educated Alexander that in his twelfth year he conversed with all sorts of men intelligently, kings and ambassadors, learned and unlearned, townspeople and rustics, and could contribute something apposite to the conversation, either in the way of question or answer. Conversation with their elders, becomingly and modestly conducted, should be encouraged in the young, and their faults of manner thus corrected.

The young will acquire tolerance of labour if they are always doing something or other—either work or play. Perpetual but moderate occupation of mind and body give rise to industrious and active habits. ‘*Generosos animos labor nutrit,*’ says Seneca.

6. JUSTICE *will be learned by doing harm to no one, by giving to each his own, by avoiding lying and deceit, by being generally serviceable and amiable.*

Under Justice is included promptitude and alacrity in serving others.

The inherent vice of selfishness is thereby counteracted, and regard for the public good engendered. The boy has to be taught the scope of our life,—that we are born not for ourselves alone, but for God and our fellow-men.

7. *The formation of the virtues should begin from tender years, before vices take possession of the soul.*

If good seed be not sown, the field will still produce, but the produce will, in that case, be weeds and tares. Begin from the earliest years to plough and sow, if you would reap a harvest.

8. *The virtues are learned by constantly doing honourable things.*

Things to be known are learned by knowing, things to be done by doing; therefore, obedience is to be learned by obeying, abstinence by abstaining, truthfulness by speaking the truth, constancy by being constant, and so forth.

9. *Let the examples of a well-constituted life always shine as a lamp before children—the examples of parents, nurses, teachers, school-fellows.*

Boys are as imitative as apes, and learn to imitate long before they learn to know. Historical examples are good, but living examples are better.

10. *Nevertheless, precepts and rules of life are to be added to examples.*

The precepts of Scripture and the sayings of wise men should be taught.

11. *Children are to be most diligently guarded against intercourse with bad companions, lest they be infected.*

Vicious example is a poison to the mind, whether it enter by the eye or ear. In consequence of our depraved nature, evil things cling with wonderful facility and tenacity. Idleness leads to evil, and hence the importance of constant occupation, be it work or play.

12. *Discipline is necessary for the purpose of withstanding immoral habits.*

By discipline is meant reproof by words and chastisement by stripes. Punishment by stripes should be reserved for moral offences. This subject is further treated of below.

III. METHOD AS APPLIED TO PIETY.

Though piety is the gift of God through the Holy Spirit, yet as the Spirit commonly acts through ordinary means—parents, teachers, and ministers of the Church,—it is right to consider the method of the duties of these instruments.

Comenius gives great prominence to this part of his Didactic, and treats of it at considerable length; but it cannot be said that *Method* in any strict application of that term is successfully exhibited in its relation to religious instruction. The chapter on this subject is in reality a series of propositions in which the order of Christian doctrinal teaching is laid down, and to some extent the manner of it. The following paragraphs contain the substance of his instructions:—

After laying down three sources of piety, viz., the Holy Scriptures, the world or nature, and ourselves (*i.e.* the natural instincts and intuitions which give a knowledge of God, and our dependence on Him), he says that there are three ways of cherishing piety, viz., meditation on the words, works, and goodness of God; prayer, which he defines to be *perpetua ad Deum suspiratio*; and self-examination. ‘Examine yourselves

whether ye be in the faith: prove your own selves' (2 Cor. xiii. 5).

In educating children in religion we should attend to the following rules:—

Begin in infancy: we must sow good seed.

From the very first accustom the child to express devotion *bodily* with his eyes, hands, feet, and tongue; by gazing towards heaven, spreading out his palms, bending his knees, and invoking God and Christ, reverencing and adoring the invisible Majesty.

Let them be taught that we are here not for this life alone, but that eternity is our goal; that our chief aim is to be so prepared as worthily to enter eternal habitations; and that all we do must have the future life in view, and that we must constantly bear in mind the twofold destiny that awaits man hereafter.

Let them be taught that thrice happy are they who so regulate their lives as to be worthy of dwelling with God; that whosoever walk with God here, will dwell with Him everlastingly, and that by walking with God is meant having Him constantly before our eyes, fearing Him, and keeping His commandments.

Let them be taught to refer all things—whatsoever they hear or see, do or suffer,—to God, mediately or immediately.

Let them learn to occupy themselves from the earliest years with those things that lead to God—the reading of the Holy Scriptures, the exercises of divine worship, and good works.

Let the Holy Scriptures be the Alpha and Omega of Christian schools.

Let whatever is learned from Scripture be referred to the three graces of Faith, Hope, and Charity; and let these graces be taught with reference to practice. These will be taught in relation to practice if the young be taught to *believe* all that God has revealed, to *do* what He commands, and to *hope* for what He promises.

Let boys be accustomed to the doing of those works commanded by Heaven, that by those works they may show forth their faith—the works, namely, of temperance, justice, compassion, patience, etc.

Let them be taught to see clearly the purposes of the benefits God confers, and of the chastisements He inflicts.

Let them be exhorted to keep the way of the Cross as the most secure way, and let care be taken that no vicious examples obstruct them in their path.

Finally, let them be taught that, since, because of the imperfection of their nature, they can do no good thing, they must rely on the perfection of Christ, the Lamb of God that taketh away the sins of the world.

The mode of dexterously doing all this in the different classes of the school has to be carefully considered.

Comenius maintains at considerable length, and with occasional eloquence, the necessity of either banishing Pagan authors from schools, or at least of using them with caution. Realists like Comenius discouraged purely classical studies, not merely because they usurped

the place which ought to be assigned to the study of subjects having a practical bearing on this life, but also because they obstructed or at least did not promote, the true ends of a Christian school.

All now accept the opinion that the classical authors are to be read by boys with due caution ; but I imagine that none will be found to take the restricted view that they should be excluded altogether from schools even on religious grounds. Strict logical reasonings from a fundamental principle are justly suspected when they land us in such conclusions, and the majority of teachers are content to sacrifice logic rather than part with their common sense.

IV. ON SCHOOL DISCIPLINE.

The Bohemians say that ‘a school without discipline is a mill without water.’ For take the water away and the mill stops ; take discipline away and the school lags. It does not follow from this that a school is to be a place of cries, blows, and weals ; but there must be vigilance and attention, both in the teacher and taught.

What is discipline save a certain way whereby scholars (*discipuli*) are made to be *truly* scholars ?

Let us consider, then, discipline in its end, its matter, and its form—its *cur*, *quando*, *quomodo*.

1. *The end of discipline.*—This is not the punishment of a transgressor for a fault he has committed (the done

cannot be undone), but the prevention of the recurrence of the fault. Accordingly, the master must execute punishment without passion, anger, or hatred, but in such a way that the boy under discipline will recognise that it is done for his good, and on that account will accept it as he would accept a disagreeable draught from a physician.

2. *The matter of discipline.*—A severe discipline is not to be exercised in the matter of studies, but only in that of morals. If subjects of study are rightly arranged and taught, they themselves attract and allure all save very exceptional natures; and if they are not rightly taught, the fault is in the teacher, not the pupil. Moreover, if we do not know how to allure to study by skill, we shall certainly not succeed by the application of mere force. There is no power in stripes and blows to excite a love of literature, but a great power, on the contrary, of generating weariness and disgust. A musician does not dash his instrument against a wall, or give it blows and cuffs, because he cannot draw music from it, but continues to apply his skill till he extracts a melody. So by our skill we have to bring the minds of the young into harmony, and to the love of studies, if we are not to make the careless unwilling and the torpid stolid. A spur and stimulus are often needed, but a sharp word or a public reproof or the praise of others who are doing well, will generally suffice.

Those who transgress in moral matters are to be more seriously dealt with. Impiety, for example, such as blasphemy and obscenity, and all that is done

against the law of God, constitute serious offences, and can be expiated only by a severe chastisement. Contumacy and deliberate perversity, wilful non-doing of what the pupil knows ought to be done—are to be punished. Also, pride, envy, and sloth.

3. *The how of discipline.*—The sun (regarded by Comenius as the cause of atmospheric changes) *always* gives forth light and warmth, often rain and wind, rarely thunder and lightning. So (1.) The teacher should always shine as an example, in his own person and conduct, of all he requires from others. (2.) By words of instruction, exhortation, and occasionally reproof, he should *labour* to sustain discipline, being most careful that all he says verily comes from a parental interest in and affection for his pupils, for if the pupils do not see this they harden their hearts against discipline. (3.) If any pupil is of so unhappy a disposition that these gentler methods fail, more violent remedies should be applied, lest anything should be left undone before utterly despairing of a boy; but great care has to be exercised that we do not resort to extreme remedies except in extreme cases. *Extrema in extremis.* The whole object of discipline, we must never forget, is to form in those committed to our charge a disposition worthy of the children of God.¹

¹ Speaking of the improvement of schools, Professor Eilhardus Lubinus says:—‘Prorsus sentio virgas et verbera servilia illa instrumenta ac ingeniis minimè convenientia minimè in scholis adhibenda sed procul removenda esse et admovenda mancipiis et servilis animi nequam servis.’

This is the end of Method as applied to Knowledge, Virtue, and Religion, and it seems to be a fit place to introduce some precepts of Comenius which are given in the *Dissertatio de sermonis Latini studio*.

PRACTICAL HINTS TO THE TEACHER OF A CLASS.

1. Let the teacher not teach as much as he is able to teach, but only as much as the learner is able to learn.

2. Whatever difficulty and trouble scholastic labours bring, let these be borne by the teacher, nothing being left to the pupil except the desire to imitate, and the acquisition of facility in imitating.

3. Whatever teachers wish their pupils to know, let them set forth that thing with the greatest possible perspicuity.

4. Whatever teachers wish their pupils to do, let them point out the way by themselves doing it.

5. Let nothing ever seem so easy as to relieve the teacher of the duty of striving, in various ways, to make it more perspicuous and more easy of imitation.

6. Never let the pupils be overburdened with a mass of things to be learned.

7. Three things always are to be formed in the pupil, viz., mind, hand, and tongue.

8. And these three come one after the other. It is the easiest of the three to understand anything; the next is to imitate it in writing; the most difficult, and that which is nearest perfection, is to be able to express it with the tongue. This is applicable to arts and

sciences as well as language. Let the teachers therefore give heed that, whatever they desire their pupils to learn easily and successfully, shall advance by these gradations without confusion.

9. Always let examples precede, as being the matter of instruction; let precepts and rules follow, as the form.

10. Never dismiss any subject which has been begun, until it is thoroughly finished. Let the teacher never take more matter for a lesson than can be both set forth and expounded within the same hour, and impressed on the intellect and memory of the pupils, during that same hour, by fit examples.

11. Let the first foundations of all things be thoroughly laid, unless you wish the whole superstructure to totter.

12. Accordingly, whatever the teacher begins to teach, let him give pains to see that it is accurate, and so firmly learnt that those things which follow can be safely built on the top of it.

13. If anything has been wrongly apprehended, take care that it do not drive roots into the mind, but that it be immediately torn up.

14. Whatever is taught, let it be taught accurately, that it may not cause misconception.

15. Let similar diligence be applied in giving exercises in style (composition).

16. To insure this, let the example, which is given for imitation, be unexceptionable, and let the imitation of it be attempted only in the master's presence, and under his inspection.

17. By far the greatest abridgment of labour is for the teacher not to teach one boy alone, but many together.

18. In order that this may be done, two things are necessary :—

(a.) That those pupils only be admitted into the same class who are of equal advancement, and that they be admitted at the same time.

(b.) That skill be used, with a view to secure that none of the pupils shall be ignorant of that which is taught to all.

19. To secure this, the following things must be attended to :—

(a.) Let the teacher take care that he always brings to his class something in the way of instruction likely to please and to profit.

(b.) At the beginning of every task the minds of the pupils should be prepared for the instruction, either by commending to their attention the subject to be taught ; or by putting questions on what has been already taught, which lead up to the new by showing its coherence with the old ; or by bringing out their ignorance of the subject, so that they may receive the explanation of it with greater avidity.

(c.) Let the master stand in a somewhat elevated position, where he can see all round him and so prevent any one from doing anything else but looking at him.

(d.) Let him always assist the attention of the pupils by presenting everything, in so far as possible, to the senses (hearing, seeing, etc.).

(e.) Let the teacher sharpen the attention of the pupils by occasionally asking one here and there, 'What was it I just said?' 'Repeat it,' etc.

(f.) If any one who has been asked a question fails, let the teacher go to the second, third, tenth, thirtieth, *without repeating the question.*

(g.) If one or another cannot do it, let him ask the question of the whole class, and praise publicly the one who answers first and best ; and

(h.) When the lesson is finished, let an opportunity be given to pupils of asking the teacher questions whether with reference to the lesson then given or to any previous lesson.

These precepts in the art of teaching are not given for the sake of the school alone, but because they promote habits in the pupil which are of value in after life.

Fourth Section.

ON THE GENERAL ORGANISATION OF A
SCHOOL SYSTEM.

A CERTAIN fixed time ought to be set apart for the complete education of youth, at the end of which they may go forth from school to the business of life, truly instructed, truly moral, truly religious.

The time that is required for this is the whole period of youth, that is to say, from birth to manhood, which is fully attained in twenty-four years. Dividing the twenty-four years into periods of six years each, we ought to have a school suited to each period, viz., the school of—

1. Infancy :—the mother's lap up to six years of age.
2. Boyhood :—*ludus literarius*, or vernacular public school.
3. Adolescence :—the Latin School or Gymnasium.
4. Youth :—the University (*Academia*), and travel.

The Infant School should be found in every house, the Vernacular School in every village and community, the Gymnasium in every province, and the University in every kingdom or large province.

In these various schools the same things will be

taught, each subject being adapted to the stage of progress ; in the earlier stages subjects will be taught more broadly and generally, in the later more in detail.

In the Mother School the external senses chiefly will be exercised in relation to objects and the distinguishing of these. In the Vernacular School the inner senses, imagination,¹ and memory will be exercised along with their executory organs, the tongue and hand, by means of reading, writing, drawing, singing, counting, measuring, weighing, and learning by heart. In the Gymnasium the intellect and judgment will be formed by means of dialectic, grammar, rhetoric, and the 'what' and 'why' of the real sciences and arts. In the University those things will be taught which depend on the Will of man and reduce the mind to harmony, *e.g.* Theology, Mental Philosophy, Medicine (*i.e.* knowledge of the vital functions of the Body), Jurisprudence.

That this is the true method of procedure is manifest ; for first external things are *impressed* on the senses, then the mind seeks to *express* what it has received by reproducing the images of things in memory, and by the tongue and hand. Intelligence thereafter applies itself to what has been so acquired, and compares and weighs that it may learn the reasons and causes of things, thereby promoting the understanding of things and judgments regarding them. Finally, the Will seeks to establish its sovereignty over all things. To interfere with this order is to trifle with the whole subject, and yet this is what those do who introduce boys to

¹ *i.e.* the representative and reproductive imagination.

Logic, Ethics, Poetry, Rhetoric, before they have an adequate knowledge of the realities of sense.

Again, the Mother School and the Vernacular School will train all the population of both sexes ; the Gymnasium will train those boys who aim at being something higher than artisans ; and the University will form the future teachers and guides of others, so that there may never be wanting for the Church, School, or State, fit governors. These grades of schools find their analogy in the spring, summer, autumn, and winter of the year. But all these things have to be fully developed ; and this Comenius now proceeds to do.

I. THE IDEA OF THE MOTHER SCHOOL.

In the Infant School (which is the family) the elements have to be taught of everything necessary to the building-up of the life of man, and we shall show that this is possible by running over the different departments of knowledge.

(a.) *Metaphysics*.—Conception in infants is general and confused ; they do not distinguish things according to kind, but general terms are familiar to them and arise out of ordinary observation, viz., Something, Nothing, Is, Is-not, So, Otherwise, Where, When, Like, Unlike, etc., which things are the foundations of Metaphysics.

(b.) *Physics*.—In this infant stage the child will learn the rudiments of natural knowledge ; he learns to know water, earth, fire, rain, snow, ice, stone, iron, tree,

grass, bird, fish, ox, etc. etc., and the parts of his own body.

(c.) The beginnings of Optics he learns when he learns to name light, darkness, and the principal colours.

(d.) Astronomy he begins when he learns to name sun, moon, star, constellation, and the rising and setting of these.

(e.) The beginnings of Geography are learned when the child understands what a mountain is, a plain, a valley, a river, a village, a city, a state.

(f.) Chronology is learned in its rudiments in learning what an hour is, a day, a week, a month, a year, yesterday, to-day, and to-morrow, etc.

(g.) History he learns in learning what has recently happened, and the way in which it happened, and how this or that man conducted himself.

(h.) Arithmetic he learns by finding out the much and the little, by counting up to 10, and by the simplest forms of addition and subtraction.

(i.) The rudiments of Geometry are learned in discovering what is great and small, long and short, broad and narrow, thick and thin, a line, a circle, etc., and the ordinary measures.

(j.) Statics are learned in observing the light and heavy, and by balancing things.

(k.) Mechanics are learned by causing the children to carry things from one place to another, to arrange things, to build and take to pieces, to tie and untie. All such things, the young delight to do, and they have merely to be encouraged and directed in doing them.

(*l.*) The beginnings even of Dialectic are taught by question and answer, and by requiring direct and adequate answers to interrogations.

(*m.*) Grammar is acquired by the child in its elements through the right articulating of his mother-tongue, letters, syllables, words.

(*n.*) Rhetoric is acquired, in its beginnings, by hearing the use of metaphors in ordinary conversation, and of the rising and falling inflection in speech.

(*o.*) The foundation of a taste for poetry is laid by learning little verses, chiefly of a moral kind.

(*p.*) The daily exercises of household piety, including the singing of easy psalms and hymns, will give the elements of music.

(*q.*) The rudiments of Economics are furnished by noting the relations of father, mother, domestic servant, and the parts of a house and its furnishings.

(*r.*) Of Polity less can be learned, but even in this sphere some knowledge of the civil government and the names of governors and magistrates may be acquired.

(*s.*) But above all, the foundations of Morality have to be firmly laid—by training to temperance in all things, cleanliness of habits, due reverence to superiors, prompt obedience, truthfulness, justice, charity, continual occupation, patience, serviceableness to others, civility.

(*t.*) In Religion and Piety the beginnings are to be laid. The elements of the Christian religion should be committed to memory, and the child should be trained to recognise the perpetual presence of God, his dependence on Him, and to see in Him a punisher of

evil and a rewarder of good. Simple prayers should be taught, and the child led to bend the knee and fold the hands in prayer.

Such is the task of the Mother-School, of which Comenius promises to treat in more detail in a separate treatise, entitled *Informatorium Scholae Maternae*.

In this separate treatise, however, little is added to what has been already laid down. He urges his points in more detail certainly, but without adding anything new. The value of the treatise consists in its hortatory character. The more important additions are under the heads of discipline, of childish occupations, and of bodily health.

As to *discipline*, he denounces as intolerable the noise, irregularity, and licence of some families, and urges as a remedy the example of elders, and verbal reproof; but above all, encouraging words, which tell powerfully with children. In the last resort only is the rod advocated.

In the matter of *occupations*, he urges the encouragement of all kinds of sports, and especially the love of constructing buildings, etc., in imitation of what they see, which is a natural instinct of children.

The *bodily health* of the child must be a prime object, as bodily vigour is the condition of all proper mental growth. It is not enough simply to pray that our children may be healthy and vigorous. God's blessing is given to labour on our part. Even during pregnancy, the mother should keep in mind her duty to her offspring. She should devote her mind to religious exer-

cises more than usual, avoid all excesses in eating and drinking, and all mental anxieties ; and yet she should not be idle or luxurious, but occupy herself with alacrity and cheerfulness in her usual duties. Comenius denounces in fervent language the employment of milk-nurses, holding that both Nature and Divine Providence have marked out the duty of suckling as at once a maternal duty and privilege. After the child is weaned, simple diet only should be given, such as bread, milk, butter, and some kinds of vegetables.

Books containing pictures of things should be put into the hands of little children. This will stimulate their observation, and help them to read, especially if the names of the things drawn or painted are written under the representations.

All the work of the Mother School is to be done in the family circle.

II. THE IDEA OF THE VERNACULAR SCHOOL.

By the Vernacular School Comenius means what we now call the Primary School, and he presumes it to be attended by children from the age of six to twelve (their thirteenth year).

The scope and aim of the Vernacular School are stated in the form of an answer to those who hold that such schools are only for girls, and those boys whose destiny in life is industrial, and who maintain that for those whose duration of education is to be more prolonged and whose aim is higher, the Latin School or Gymnasium is the proper place from the first.

It is evident, he says, that this view is opposed to all the principles that have been laid down. If it be that our duty is to instruct *all* human beings in *all* those things that have to do with human affairs, they must *all* go through the same course as long as they hold together. We desire to instruct all alike in moralities, and also to promote mutual serviceableness, and we should remove everything which can foster the disposition to appraise oneself too highly, and to look down on others. Again, we cannot venture to say of boys six years old what their ultimate destination may be. Further, he objects to the superstitious attachment to Latin—the vernacular tongue, modern tongues, and the study of things being more important. Even the Latin tongue itself will be better learned by one who knows his vernacular, and who has in learning a new language simply to adapt new names to things already known. In brief, the Vernacular School ought to teach all that will be of use for the whole of life, and this to all.

Subjects of Instruction in the Vernacular or Primary School.

1. Let the pupil learn to read all things in his own tongue, whether printed or script.
2. Let him learn to write first neatly, then quickly, then with grammatical propriety, in accordance with rules popularly expounded.
3. Let him learn arithmetic as far as necessary.
4. Let him learn to measure lengths, breadths, distances.

5. Let him learn to sing the more common melodies, those who have an aptitude for it being also taught the elements of harmony¹ (or notation?).

6. Let him learn by heart the psalms and hymns more commonly used in churches.

7. Let him learn to repeat with accuracy the Catechism, and important passages from Holy Writ.

8. Let him understand morality in its precepts, and by means of examples suited to his age, and let him begin the practice of it.

9. Let him understand as much of economy and polity as is necessary for the understanding of what goes on around him.

10. Let him not be ignorant of the general history of the world—its creation, fall and redemption, and its government by the wisdom of God.

11. Let him be taught general geography, and the geography of his own country more fully.

12. A general knowledge of the mechanical arts should be given, that boys may better understand the affairs of ordinary life, and that opportunities be thus given to boys to find out their special aptitudes.

The beginnings of all kinds of knowledge will thus be laid, whatever be the future destiny of the pupils.

Means of attaining the above Ends.

1. The school period being extended over six years, the school should be divided into six classes, kept apart from each other as much as possible.

¹ *Figuralis musica.*

2. Each class should have its own books, which should contain *everything* necessary for its instruction in Literature, Morals, and Religion. These books should exhaust the vernacular tongue, in so far as the naming of things within the range of a boy's apprehension and all the more usual modes of speech, are concerned. There ought to be six such books, differing in their *mode of treating* subjects, not in the subjects they treat: advancing always from the more simple to the more special and detailed. They should be carefully adapted to the age of the pupils, and should combine the pleasant with the useful. As a school has been compared to a garden, so the titles of these books might well be made attractive by reference to a garden—e.g. the first might be called *Violarium*, the second *Rosarium*, the third *Viridarium*, the fourth *Labyrinthus*, the fifth *Balsamentum*, and the sixth *Paradisus Animæ*.

3. The school-hours should not be more than four daily—two before noon and two after noon,—thus leaving time for amusement, and for domestic duties when the children are poor.

4. The morning hours should be given to those lessons that exercise the understanding and memory, the afternoon to those which engage the voice and hand.

5. In the morning hours, the teacher will read and re-read the lesson, giving simple explanations, while all listen attentively, and will then call on certain pupils, one after the other, to read, the rest attentively following. If the lesson is prolonged, the clever boys will be

able to say it off by heart, and later on the slower boys also; for the tasks will be short, and suited to the capacity of the pupils.

6. In the afternoon, nothing new should be attempted. The repetition of the morning lesson, transcription from the printed book, and competition as to who remembers most accurately, or can sing, write, or count best. The neat transcription of the printed books is a most valuable exercise, for the lesson is thereby more thoroughly impressed on the mind through the occupation of the senses with it, and practice in correct spelling and neat writing is given. The parents also learn from these books what their children are doing at school.

In conclusion, Comenius recommends that if any boys desire to learn foreign tongues they should begin them after their tenth year, and during the latter part of their attendance at the Vernacular School. For teaching purposes, translations into the foreign language they are learning of those books which are already known to them in the vernacular tongue should be used.

III. THE IDEA OF THE LATIN SCHOOL, OR GYMNASIUM.

In this school there should be an encyclopædic course, including four languages.

The course being a six years' one (from twelve years of age to eighteen), there should also be six classes.

The subjects to be taught are as follows:—

Grammar, that is to say, a thorough knowledge of

the vernacular and Latin, and such a knowledge of Greek and Hebrew as may be necessary.

Dialectic, i.e. practice in defining, distinguishing, arguing, and in resolving arguments.

Rhetoric, i.e. the power of elegant composition on any given matter.

Arithmetic.

Geometry.

Music, practical and theoretical.

Astronomy.

These are the boasted seven liberal arts which make a man a master in philosophy. Comenius would have them taught in the Gymnasium, and, in addition, the following subjects :—

Physics, including Natural History and Mineralogy, and applications to the arts.

Geography.

Chronology.

History.

Ethics, i.e. a knowledge of the virtues and vices, and of their special application to life. And, lastly,

Theology, so that youths should have, not only a thorough knowledge of the doctrines of their faith, but of the scriptural basis of them.

It is not presumed that a thorough knowledge of all these subjects can be attained in the Gymnasium ; but only that a solid foundation may be laid in them all.

To the six classes a separate name is assigned, indicating the order in which studies are to be taken up, viz., the Grammar class, the Physics class, the Mathe-

mathematical class, the Ethical class, the Dialectic class, and the Rhetoric class.

The Grammar class comes first, as the key to all else. Then the Physics precedes the Mathematics, because the numbers and quantities dealt with in the former are more within the sphere of sense than they are in the latter. Mathematics is general and abstract. Ethics will deal, not merely with the *what* of morality, as in the Vernacular School, but advance to the *why*. Dialectic will take up Physical and Ethical questions with a view to the *pro* and *con.*: it will also include a short course of logic, and the principles of investigation, and sources of error. Rhetoric, or the art of fit and elegant expression, comes last, when the youth has the necessary material for writing, and its range will be confined to very brief and very clear rhetorical precepts.

It has to be remarked that in every class, History, as the eye of life, should find a place, so that all that is most memorable in the past, both in deed and word, may be known. This, so far from increasing the burden on pupils, will lighten their labours. Little text-books should be written, viz., one on Biblical History; one on natural things; one on inventions and mechanical arts; one exhibiting the most illustrious examples of virtue; one on the various customs of nations; and finally, one containing all that is most significant in the history of the world, and especially of our own country.

It is to be taken for granted that Comenius, while defining the distinctive work of each class, presumes

that the work done in the classes that precede it, is still continued. Without this, how would a sufficient knowledge of language, for example, be obtained? The Dialectic and Rhetoric classes would afford special opportunities for the revision of all the work done in the classes that preceded them.

Comenius postpones the question of the special method to be followed in the Gymnasium, merely remarking that, of the four school hours, the two before noon should be devoted to that subject by which the class is named, and the two afternoon hours to history and to exercises in writing and repeating.

IV. THE IDEA OF THE UNIVERSITY (*Academia*).

Every department of knowledge should be handled in the Universities. There will be need, accordingly, of Professors learned in all arts, sciences, faculties, tongues, and also of a library for common use.

As to the method to be pursued:—

1. Only the more select minds—the flower of youth—should be sent to Universities, all others being relegated to agriculture, the workshop, or trade.

2. Each should apply himself to that line of study for which he is specially fitted, so that nothing may be done *invita Minerva*. It would be well that the destination of youth should be fixed by a leaving-examination in the Gymnasiums.

3. Minds of large mould should be stimulated to universal knowledge, that there may be a certain number

of men of universal accomplishment—πολυμαθεῖς or πάνσοφοι.

4. The University should retain only those students who are industrious, honourable, and able. Those pseudo-students, who go there to spend money and waste time, should not be tolerated.

5. Authors of every kind should be studied; but as it is impossible for all to read everything that authors have written, men, learned each in his own department, should produce books which would contain, in a systematic form, the sum of Plato, Aristotle, Cicero, Galen, etc. These systematised summaries would serve as an introduction for the use of those who were going to study these great writers, and furnish all that was necessary for those who had to devote themselves specially to other studies.

6. Of academic exercises, a very important one is public disputations: the students discussing, at an afternoon meeting, what the Professor has given in a forenoon meeting, and contributing to the subject from their own reading, and suggesting questions, while the Professor acts as president.

As regards Graduation:—

University honours should be conferred only on the worthy, and it should depend on a public inquiry by commissioners, and not on private testimony, so that Doctorships and Masterships may be conferred only on those conspicuous for their diligent pursuit of learning. The qualification of the candidates should be ascertained by public oral questioning in the theory and praxis

of the subjects they have studied—*e.g.* Where is this, that, or the other passage to be found? How does it agree with this or that? Do you know any author who dissents from this view? Who? What arguments does he advance, and how are they to be met? Again in *praxis*: cases are to be put—in conscience, or in medicine, or in legal causes; the how and the why is to be put, and a variety of cases brought forward, so that it may be seen that the candidate has a thorough knowledge of his subject, and can judge wisely.

Travel with a view to education should be allowed only, as Plato says, when the hotness of youth is over, and the young man has acquired sufficient prudence and tact.

So much for the University as a teaching body; but in addition to all this there ought to be a *Schola Scholarum* or *Collegium Didacticum* founded somewhere or other; and if the foundation of such a college is impossible, learned men in all parts of the world devoted to the advancement of God's glory, should combine to prosecute researches in science, and to make new discoveries bearing on the improvement of the human race. Neither one man nor one generation is sufficient for this great task; many men jointly and in successive generations must carry on the work begun. Such a universal school would be to the rest of schools what the stomach is to the body—the living workshop, supplying sap, life, strength.

CONCLUSION.

Comenius in conclusion elaborates an analogy between his method and the Art of Printing. As the Art of Printing is to the old method of producing copies of books, so is his method of education to the methods then in use. Into this parallel we need not follow him. A greater number of pupils, he maintains, will be taught with fewer teachers; a larger proportion of pupils will be truly instructed; and many who now receive no benefit from schools will receive substantial culture. As regards teachers, again, those who are not by nature adapted to the work of instruction will, by following sound method, acquire aptitude. As an organist can play from a book, symphonies which he himself could not possibly have composed, so a school-teacher may learn to teach all subjects, if he have reduced into a schematic form, as it were, all the subjects that have to be taught, and the whole method of teaching them.

I have now given the sum of the *Great Didactic*.

PART II.

METHOD IN THE TEACHING OF LANGUAGE MORE FULLY CONSIDERED.¹

THE *Didactica Magna* does not contain all that Comenius has to say. In the prefaces to his various works there are many sagacious observations both on Methods and on Education in general. These observations apply chiefly to the teaching of language. School-instruction in the fifteenth and sixteenth centuries was substantially language-instruction; and the language chiefly, though not exclusively, taught was Latin. It was unavoidable therefore that Comenius, in applying his principles and rules of Method, should have his attention largely concentrated on the teaching of Latin. Prior to Ratich, indeed, the general interest which had been excited throughout Europe in the subject of Education had for its object, so far as schools were concerned, chiefly the current methods of teaching the Latin tongue. There was a widespread and loudly expressed dissatisfaction with the results of school-teaching. Boys and masters were alike unhappy—these as teachers, those as learners; great severity

¹ From the *Methodus Linguarum novissima fundamentis didacticis solide superstructa*, 1648.

of discipline was practised, and after all was done, and all the years of youth had been spent in the study mainly of one subject, the results were contemptible. In 1614 Eilhardus Lubinus, an eminent theologian who edited the Greek Testament in three languages, speaks in these words:—‘The customary method of instruction prevalent in schools is, it seems to me, precisely what we might have expected had some one been specially hired and paid to excogitate some way whereby teachers might not introduce their pupils to a knowledge of Latin, and pupils might not be introduced, except with immense toil, unspeakable tedium, infinite loss, and the expenditure of a long period of time.

‘Quae quoties repeto vel iniqua mente revolve
Concutior toties, penitusque horresco medullis.’

And again he remarks, ‘When considering this matter I have, to speak the truth, been often led to think that some wicked and malign spirit—an enemy of the human race—had through the agency of some ill-omened monks originally introduced the method of instruction.’ And with what result?—‘The production of Germanisms, Barbarisms, Solecisms, mere abortions of Latin, dishonourings and defilements of the tongue.’

‘The most important, and indeed the only important, treatise by Comenius on Method, in addition to the *Didactica Magna* and the short treatise on the Mother School (the substance of which I have incorporated into the preceding analysis of the *Didactica*) is entitled ‘*Novissima Linguarum Methodus*, firmly erected on

Didactic foundations, demonstrated in special relation to the Latin Tongue, adapted with precision to the use of Schools, but also capable of application with advantage to other kinds of Studies.' This treatise was published in 1648. It consists of thirty chapters—the first five of which are occupied with the consideration of language itself, beginning, as is customary with the author, *ab ovo*, and approaching the question he has to solve in the most systematic manner. There is nothing in these chapters worth reproducing for our time. Indeed, it may almost be said that, like much of Comenius's writing, they are characterised by a wearisome, elaborate, and painfully systematic statement of commonplace. There is no penetrating light cast into any dark places.

The subsequent chapters are more instructive. The principles laid down in the *Didactica* now reappear in more special and detailed application to Latin. They are, however, reached analytically, and no longer synthetically.

Latin, Comenius maintains, is the one language to be preferred to all others for schools, because it is the vehicle not only of Roman, but of all, learning ; because it is the common language of the learned ; because it is an excellent introduction to the study of all tongues ; and because, owing to the definiteness of its forms and syntax, it presents fewer difficulties than Greek. There is no special difficulty in learning Latin ; what we want is a good method. Lubinus remarks that cooks and

scullions learn in a short time more of two or three modern tongues by mixing with the people who speak them than boys at school, after the greatest effort, learn of the one language Latin.

In proceeding to consider the method hitherto followed, Comenius indirectly answers Lubinus, for he points out that a language learned *only* conversationally is imperfectly learned. When we have studied a language methodically in its forms and syntax, we then know that we know it; any other mode of study yields us only more or less of the fragments of a language, and can at best give only a superficial knowledge.

The evils which need a remedy are these:—

1. The Latin language is taught abstractly, without a prior knowledge of the things which the words denote.

It will be said that the boys already know in the vernacular the things which the Latin words denote. But it is a false conclusion that because boys know how to utter vernacular words they therefore understand them. How can it advantage a boy to get at vocabularies in which he finds such things as *Necessitas*, necessity; *Pignus*, a pledge; if he do not know what either 'necessity' or 'a pledge' means? Words should be learned in their connection with things known.

2. The second evil is driving boys into the manifold intricacies of grammar from the very first.

It is the custom of schools to treat grammar from the formal instead of from the material side. This is to

count money in purse without the money. It would be less absurd if a knowledge of the grammar of the vernacular had preceded the study of Latin, in which case a knowledge of the meaning of grammatical terms and rules in relation to the matter of language would already exist in the boy's mind ; but it has not yet, says Comenius, even been proposed to teach grammar in vernacular schools, and boys are plunged into the formal statements of grammar on their first beginning Latin, so that they must imagine that grammar belongs to Latin alone. To make matters worse, the Latin Grammar is written in Latin. How should we adults like, if we began to learn Arabic, to have a Grammar written in Arabic put into our hands? And yet what we with our matured powers would resent, we demand of the tender minds of boys. Not to speak of the multitude and obscurity of the rules themselves, we ask boys to struggle first with the words of a rule, then with its sense, and finally with the genius of a tongue alien to their vernacular.

3. The third evil is the practice of compelling boys to take impossible leaps, instead of carrying them forward step by step.

We introduce them from the grammar into Virgil and Cicero,—Virgil's Eclogues simply because they are short, and Cicero's select epistles—select being here also equivalent to short. The sublimity of poetic style is beyond the conception of boys, and the subject-matter of Cicero's epistles is for grown men. It will be said that this is done that boys may acquire the words,

phrases, etc., of these authors, in the expectation that when they are older they will see their force. But why ever separate words and things? Unhappy divorce! Why begin to build a tower at the top? It will also be said that the object is to put a perfect model before boys to which they may attain. Quite right to aim at a perfect model when the aim is practicable, and if we proceed *gradually* to the highest. But a boy must go step by step, and advancing years will bring both the occasions and the power of learning. If Cicero himself were to enter our schools, and find boys engaged with his works, it seems to me that he would be either amused or indignant. Larger things are with great advantage postponed to lesser things, and the lesser things, if accommodated to the age of the learners, yield greater fruits than larger things. The eminent grammarian Vossius speaks (Lib. vii. Gram. i.) strongly against the folly of loading boys with a mass of rules and exceptions, affirming that it is not merely useless, but hurtful and obstructive. The language of Scioppius, the annotator of the *Sanctii Minerva*, is stronger and more fervid in denunciation than that of any other writer. And when we bear in mind the construction of the Latin Grammars then in use,—that of Alvarus, for example, having 500 rules and as many exceptions—we cannot be surprised at the unanimous condemnation of the then current methods of teaching, and the almost universal lamentation over the wasted years of youth.

Comenius gives some account of the various proposals for reform current in his time. It was natural

that many should be driven to the conversational method as a means of attaining a knowledge of Latin in the intercourse of daily life. Schoolmasters were tyrants and torturers of boys, and the instrument of their tyranny was the Latin Grammar. Cæcilius Frey, on the same side of the question, proposed the institution of Colleges, where all, including the servants, should speak Latin and Greek. To these, boys might be sent in their second year, and while not neglecting their mother tongue, acquire a free use of Latin and Greek in conversation, during their play and at their meals. He supported his scheme by the success which had attended this method in the case of Montaigne, who when six years old could speak Latin better than his native French. On the other hand, Melanchthon, the restorer of letters in Germany, and an ardent school reformer (*Praeceptor Germaniae*, as he was called), strongly advocates grammatical instruction, and inveighs vehemently against those who would propose to teach by practice alone without syntactical precepts. He calls this method a confused kind of procedure, by which it is not possible to obtain sound learning. He considers that those who counsel such a method are the worst friends of youth, and that they recommend what is not only pernicious in its effects while the pupils are still boys, but hurtful to them throughout life. A contempt for grammatical precepts will engender a similar contempt for the groundwork of other arts, and sap the foundations of that reverence which is the support of private and public morals. He con-

siders that 'penalties ought to be inflicted by the State on those teachers who despise grammatical rules.'

The eminent Lipsius deplotes the years, from ten to thirteen, which he spent over grammatical trifles, and thinks that the time would be better spent in reading, and in obtaining a knowledge of things. Caselius also advocated the reading of authors, and constant exercises in writing Latin. Ratich, Comenius's distinguished predecessor in the work of Educational Reform, was of Caselius's opinion, but his method was to put an author level with a boy's capacity into a pupil's hands at once—such an author as Terence—to get him to read and re-read the Latin, in the expectation that with some explanation by the master he would begin gradually to understand. At the third reading only should exercises in declining and conjugating be given, and this not in accordance with rules, but merely referring from time to time to types of declensions and conjugations. At the fourth reading the syntax and phraseology generally should be taken up and taught by the master, but all from the author himself. The master according to this method does almost everything, the pupils being to a great extent passive. Ratich had many followers, and some keen opponents.

Lubinus desired some compendious way, and advocated the construction of a book containing pictures of things, with a certain number of brief sentences attached to each, till all the words and phrases of Latin were exhausted. These, he said, should be explained in order, and committed to memory.

But the most important attempt, in Comenius's opinion (as I have elsewhere stated), was that made by an Irishman—a Jesuit father in the Anglican seminary at Salamanca, to which reference has been already made. This man, in conversation with some Englishmen, members of an embassy to Spain, when asked how a man might learn the Spanish language quickly, commended his own method for learning Latin. He had printed a book in which Latin words with a Spanish translation were arranged in complete sentences, in such a way (the same words never being repeated) that any one learning these sentences would know the foundations of the Latin tongue. This conversation took place in 1605, and the book itself was afterwards published in England with an English and French version, and was reproduced in Germany with the addition of a German version by Isaac Habrecht. The celebrated Scioppius published a Latin-Italian edition, and afterwards, in 1636, at Basel, an edition in Latin-German-Greek-Hebrew appeared.

In 1628, says Comenius, when meditating on the subject of a Latin first book, and having already come to the conclusion that words and things were best learned together, 'I planned a book in which all things, the properties of things, and actions and passions of things, should be presented, and to each should be assigned its own proper word, believing that in one and the same book the whole connected series of things might be surveyed historically, and the whole fabric of things and words reduced to one continuous

context. On mentioning my purpose to some friends, one of them directed my attention to the Jesuit father's *Janua Linguarum*, and gave me a copy. I leapt with joy; but on examination, I found that it did not fulfil my plan.

In 1631 Comenius issued his *Janua Lingua Latinae Reserata*, which was cordially received, and found its way by translation into most European, and some Asiatic, languages. A short experience of the book satisfied him that an introduction to it was needed, and he then published a *Vestibulum* in 1632. The idea and plan of the *Palatium* and *Thesaurus*¹ (as mentioned in the *Didactica*) followed in due course.

THE METHOD.

It appears that many teachers, believing that there was some hidden virtue in the *Janua* of Comenius, had used it without discretion, and had consequently been disappointed in the results. Comenius points out that while a good text-book is always essential to the teacher, the expected fruits can be gathered only by the application of a good method.

The desideratum which method supplies is a simple and short way to the knowledge of a language. So far as words are concerned, this way is through things. Words are only the ministers of things, and if we study the former through the latter, we shall find one of the first conditions of good method satisfied. Hence the

¹ Called sometimes *Atrium* and *Palatium*.

text-books published by Comenius which have been so frequently referred to, and which will be described in our next chapter.

But this is not all: the teacher must not only see that the pre-conditions of a good method are satisfied; but he must himself follow a sound method in teaching. What is that method? It is already laid down in the *Great Didactic* syncretically, *i.e.* worked out by comparison with something else, *viz.*, Nature. But Comenius, never weary of his task, takes up the question afresh, and now deals with it analytically. He asks the question, 'What is it to teach?' and answers, 'To make another learn and know what the teacher already knows.' To do this with art, is to follow certain defined paths in teaching which will insure that acquisition is quick, easy, and solid. He then asks 'what it is to learn,' and answers, 'To advance to the knowledge of the unknown through the known.' From this analytic statement he deduces, under the head of General Didactic, eighty propositions in thoroughly scholastic style, and with not a little of the scholastic poverty of genuine substance. It would be a waste of time to go through these in detail, as all that is really valuable has been already exhibited in the *Great Didactic*. Some of his propositions, however, are worth quoting:—

Where nothing is taught, nothing is learned.

Where the teaching is confused, the learning is confused.

Where the teaching is negligent, the learning is negligent.

Do not begin to teach any one who is unprepared for the teaching.

Do not put off teaching one who is prepared.

Labour is for the learner; for the teacher, direction of the learners.

All things are to be taught by the threefold way of Examples, Precepts, and Exercises.

Let the example always come first, the precept next, and let the imitation by way of exercise follow close.

Let rules be short, clear, and true.

Discipline is the means used to press on learning.

Without discipline nothing is learned, or at least nothing rightly.

Discipline must be a never-ceasing constant pressure; never violent; and always graduated, so as to be fitted to its end, corporal chastisement being the final resort.

To learn is easier than to unlearn.

To teach is easier than to unteach, for the latter is a double process, the former a single one.

In teaching we have to advance from few things to many, from the brief to the more lengthened, from the simple to the complex, from the general to the special, from the near to the remote, from the regular to the irregular.

Comenius passes from General Didactic to Special Didactic, applying the general principles which he has laid down to the method of instruction in Science (which is knowledge generally), in Arts, and finally, in Language, and to the general improvement of

schools, traversing necessarily much of the ground already traversed in the *Great Didactic*.

In dealing with Science, he gives prominence to the dictum, *Nihil est in intellectu quod non prius in sensu*. The senses are the primary and the constant guides of knowledge. They are the sole solid foundations of knowledge. Wherever it is possible, therefore, all teaching should refer back to this ultimate basis of sense. We must see that the thing represented is understood. To know the differences of things is to know things.

As to Memory: To this there is necessary, first, a clear, firm, and true impression on the senses; secondly, the understanding of what is presented. Words by themselves, if capable of no order or coherence that can engage the understanding, are not to be committed to memory, e.g. the vocables *anima*, *esse*, *res*, *ordo*, difficult to remember if so learned, are easily remembered thus, *Ordo est anima rerum*. Writing is a great aid to memory. *Repetitio memoriae pater et mater est*.

Comenius, when he comes to Language, explains that it is more difficult to acquire language than to learn any one department of knowledge or science; and this because it is co-extensive with all knowable things. Here he gives some preliminary directions: e.g.—

The teacher is not to teach as much as he is competent to teach, but only as much as the learner can take in.

Examples rather than precepts or rules are to be preferred in the earlier stages of teaching.

The teacher has to exercise patience, as everything must go slowly with beginners.

A teacher who is learned in his department, and of quick parts, is apt to lose his temper : he should remember that his business is not to transform minds, but to inform them.

The questions of the *Great Didactic* are now repeated :—How is language to be learnt quickly, pleasantly, solidly? And the general answer is, Quickly, by constant familiarising with examples ; pleasantly, by giving clear precepts ; solidly, by continual practice ; and all these objects are attained generally by following good method. That is to say :—

To insure Quickness.—Clearly lay down the end at which you aim, and neglect all that does not bear on that end : keep to one example and one explanation of it, relying on practice for all else : advance by gradual steps, never *per saltum* : remember that steady, continuous progress is notable progress ; therefore, no day without a line, no hour without its task : leave nothing undone when once begun.

To insure Pleasantness.—The secret of a pleasant process lies in the handling of the minds of the young in accordance with nature. To do otherwise is to struggle against nature. Everything should be done with paternal affection, all moroseness being banished. Brevity, order, definiteness, should characterise the substance of our teaching. The senses must be always appealed to when possible. As human nature rejoices in *doing*, everything should be learned through its own

praxis. The utility and bearing of what is learned should be made manifest. Teaching should be tempered with an agreeable variety, and the playful element admitted. The rivalry and emulation of free games should be encouraged in lessons: *Quidquid in ludo literario, lusus ingenii sit.*

To insure Solidity.—The leading principle here is that we teach the young solid truth, and what will be of solid use, avoiding frivolous things, and indeed everything the truth and utility of which are not patent. Let our examples be very select, placing the thing to be learned distinctly before the eyes, so that every part of it be seen: let the rules be few, brief, clear: let exercises be appended sufficient in number to bring the example and rule clearly out, as without these a vague idea leads to vague and uncertain imitation. Let the first foundations be solidly laid; the beginnings of things are the most important; they should be taught slowly and accurately. By precipitancy everything is destroyed. Let everything therefore be rightly apprehended in its beginning, and secure this by examination. The foundations being solidly laid, proceed cautiously with the superstructure. Let nothing be laid on the top of foundations not yet firmly settled. *Non multa sed multum.* Those who sow much and plough little, lose much and reap little. *Minus serere et melius arare satius est.* Bring all the senses into requisition wherever possible. Above all, the examples and rules being given, give continual practice. Let repetitions and examinations be constant. Let the pupils be required to teach

what they have acquired. Comenius presses the great importance of this: *Tanto quis erit doctior, quanto docuerit frequentius*. Fortius says, *Multa ego didici a preceptoribus meis, sed plura a condiscipulis meis; a discipulis autem plurima*.

Comenius continues to enforce these principles, especially pressing the importance of graded books with only as much of the grammar or formal part of language as is necessary to the understanding of them, and with suitable lexicons attached. He points out the importance of giving the pupil root-words and the formation of their derivatives so as to give a stock of vocables. He recurs frequently to the proposition, which with him is vital, that a language is to be learned through things, and that the text which treats of things shall be the source out of which all language-knowledge shall be drawn; the grammar and lexicon, even in their graded and modified forms, being merely subsidiary. This leads him to the description of the principles on which his own school-books were constructed.

Without books artificially constructed it is evident that Comenius's method could not be carried out: these books present, according to him, a sure, short, and pleasant mode of access to all Latin authors. The same things are treated of in each, but at each successive stage in more advanced form—the *Vestibulum* giving only the simplest sentences, comprising primitive and root-words, and only the ordinary regular inflections and rules; the *Janua* introducing to the full grammatical structure and body of the language, and the *Atrium*

introducing to phrases, idioms, and elegances ; all these taken together constituting, as the initial letters of these various books indicate, a *Via* to authors. The best instruments, however, are useless without a good method of teaching, and a teacher who is not only skilled in his art, but ‘greedy of teaching :’ if any other shall take up the work, he will prostitute both himself and his art.

Following the above method, and using text-books such as those compiled by the author, the pupil is brought within the Palace of Latin Authors. He has been already furnished with all the words necessary to enable him to enter with advantage on the study of those which treat of *Realia*, such as Pliny in Natural Science, Vitruvius in Architecture ; in Medicine, Celsus ; in Economics, Varro and Columella, etc. But with a view to phrases and the daily forms of speech, and oratorical and poetical language, he must study other authors, or rather portions of them. For this, the first requirement is a lexicon. Again, whatever author is read, the Grammar should never be absent : if the author is in one hand, the Grammar should be in the other, as Erasmus recommends.

To acquire a thorough knowledge of Latin, and the power of writing it purely and elegantly, the method is threefold, viz., by *Analysis*, by *Excerpts*, and by *Imitation*.

1. *Analysis*.—The object of this is accurate translation into the vernacular. First, by close attention ascertain the purport of the passage before you ; then

examine closely the way in which the author attains his end, what words he uses, what phrases, what arguments, what sentences, how these are arranged, until you have, as it were, rearticulated the text. Superficial study is of little value.

2. *Excerption*.—Transfer into a repertory or diary all words, phrases, and opinions, etc., which strike you.

3. *Imitation*.—This has three stages. *First*, *Metaphrasis*, *i.e.* turning an author into the vernacular, and after some days retranslating him into Latin, comparing the result with the original, and making the requisite corrections. *Secondly*, Turning the Latin into Latin, thus: take the words in confused order, and try to write them correctly; or, abridge the text; or, amplify it by the insertion of additional words in the form of epithets, phrases, or sentences. *Thirdly*, Imitation proper: attempt, in the form of a familiar epistle or otherwise, to write in the style of the author who has been selected for imitation, on a subject of present importance but similar to that treated of by the Latin author, comparing our production with that of the classic selected for imitation, until we have so transformed ourselves into him, *e.g.* Cicero, that nothing will be agreeable to our ears which has not a Ciceronian sound.

In following these practical directions we must take care to keep to *one* author as our model, and to practise daily. The exercises should also be graduated in difficulty: in retranslating into Latin, for example, the work should at first be done immediately after reading the passage, and, after a little practice, at longer intervals.

With a view to promote the universal and ready acquisition of Latin, Comenius again suggests, as part of his method, the institution of schools which would be 'Roman cities,' and where nothing but Latin should be spoken or heard.

He further points out how, by the adoption of his method, the learning of many languages would be facilitated, for not only would the same method be followed, but the same sequence of initiatory books in a parallel series. The Grammars of the various languages also would be constructed on the same lines as the Latin grammar in so far as the languages were common.

After showing that the method of studying language is applicable, *mutatis mutandis*, to all arts and sciences, and recommending the construction of systematic compendiums of all things on the ascending scale of his Latin text-books (*e.g.* in Philosophy a *Vestibulum*, then a *Janua*, and then an *Atrium*), Comenius proceeds to show the influence which his method would exercise in improving the internal condition of schools, in promoting learning and a genuine, thorough, and widespread acquisition of the Latin tongue, in attracting the learned to the study of things instead of words, and concludes with an appeal to theologians and to the secular powers.

PART III.

COMENIUS'S TEXT-BOOKS AND THE WAY OF USING THEM.

IN the writing of text-books Comenius had his predecessors. The method of Lubinus, which I have briefly explained on page 162, approximates very closely to that of Comenius, while the *Janua* of the Jesuit father must have supplied a valuable repertory of words and phrases.

It is to mistake Comenius's plan to say that his object was to arrange all the more common words of the Latin tongue in a series of sentences, with a view to exhaust all the ordinary vocabulary. He wishes to attain this end certainly, but through *things*. He considers that if he can conceive a course of elementary lessons on *things* in general, he will necessarily call into requisition all the usual vocabulary of Latin, and so teach Latin through things. This is in accordance with his great pansophic idea.

I. THE VESTIBULUM.

First Edition.

This *Latin Primer*, though published subsequently to the *Janua*, comes first in order. It is an introduction

to the *Janua*, and, for this reason, Comenius departed from his first intention of making it a series of simple colloquies. Upwards of 1000 Latin words were selected and reduced to short sentences, all of them dealing with things and their properties. These were thrown into seven chapters comprising 427 sentences. The chapters are thus entitled:—

1. *Concerning the accidents or qualities of things*; no verbs being used save the substantive verb, *e.g.* ‘Deus est aeternus; mundus temporarius. Color est multiplex: creta alba, tabula nigra, cinnabaris rubra. Mel est dulce, sal salum. Ossa dura, caro mollis, glacies lubrica,’ and so forth over sixty-two propositions.

2. *Concerning the actions and passions of things—e.g.* ‘Sol lucet, luna splendet, stellae micant. Ignis ardet, flamma flagrat. Herba crescit, folium viret, flos floret.’ In this way he runs through the most obvious facts concerning things in the heavens; the elements; man’s body (*e.g.* caput repletur cerebro, tegiturque capillis, excepto vultu); the mind, diseased conditions, the different trades, etc.

3. *The third chapter treats of the circumstances of things*, and this enables the author to introduce adverbs, prepositions, and numerals. For example: ‘Ubi fuisti? unde redis? Ex oppido. Cum nobis ducimus, ante nos pellimus, a nobis trudimus.’

4. *The fourth chapter treats of things in the school.* For example: ‘Atramentum est in atramentario: calami in calamario; quibus scribimus in charta,’ etc.

5. *The fifth chapter treats of things at home.*

6. *Concerning things in the city.*

7. *Concerning the Virtues.*

The rule followed is the opposite of that now almost universal in elementary books; words are never repeated if it be possible to avoid repetition.

The German is given in parallel columns, and the pupil is required to read the German first, and then the Latin. The lesson said in the morning is always to be written in the afternoon. After going several times through the book, the pupil learns it off by heart, so many sentences each day. Along with the reading, the declension and conjugation of the words proceeds: first, nouns by themselves, then nouns with adjectives. Tables of the declensions and conjugations are appended, to which reference is constantly to be made. In declining, the terminations of the cases are not to be said by heart, but to be first learned by practice, the teacher giving the vernacular first, *e.g. nubes*—what is *of* a cloud? what is *to* or *for* a cloud? and so on, the boy referring to his tables. After this has been done several times, the tables are quickly and easily committed to memory. Thus the boy who has properly mastered this Latin Primer will have acquired 1000 vocables, and a knowledge of the regular declensions and conjugations.

In the *Dissertatio de sermonis Latini studio* he enters even more into detail; the *Vestibulum*, he says, is first to be read and written out for the sake of the Latin words only, without translation. The pupil is then to begin it over again and translate, first, the vernacular into the Latin, and thereafter the Latin into the vernacular.

Some knowledge of the parts of speech is to be obtained, but parsing is not to be pressed. The chief things are the easy reading and writing, and the thorough acquisition of the words. The vernacular version is to be prefixed to each separate sentence (later the author was content with a vernacular version printed by itself, but as one book with the Latin). In all cases the vernacular is to be first learned. The index at the end of the *Vestibulum* is to be used in this way: a word is to be given, and the sentence, or series of words in the text where it is found, is then to be given by the pupil from memory. The writing of the morning's lessons at the afternoon meetings is constantly insisted on by Comenius, because this exercise, by engaging the senses, fixes the exercise in the minds of the pupils. The learning of the tables of declensions is to be begun only at the fourth reading of the text-book. Comenius assumes that the text-book will be perused ten times, and in this way thoroughly got by heart. Before leaving it, exercises were to be given in translating into Latin fresh sentences more or less connected, composed of the words in the *Vestibulum* and its index.

Second Edition.

I have been thus particular in describing the first edition of the *Vestibulum*, and the mode of using it, because all the principles of Comenius's method of procedure are exemplified in it, in so far as these can be embodied in a text-book, and because it exhibits the plan of his other books.

In the second edition of the *Vestibulum* (published, or at least written, between 1650 and 1654, during his school experience in Hungary) the plan is altered. Comenius had made up his mind that, as children, when learning to speak, used words before they made sentences, so the *Vestibulum* should consist of lists of words only, with this condition, that there should be a coherence between the words of a group, thus:—

57. *Elementa*—Ignis, aer, aqua, terra.

58. In aethere—Sidera.

A quibus veniunt—Calor, frigus, aestus, gelu.

59. Sidera sunt—Sol, luna, stella.

60. In sole sunt—Lux, radius, lumen.

Sine lumine est—Umbra, caligo, tenebrae.

61. Ab igne venit—Flamma, scintilla, fumus, et fuligo.

And so on, selecting associated words, and, as much as possible, primitive words, under 500 classes of *things*. The words are in number about 5000. The boy who had got up the whole thoroughly would accordingly possess some 5000 vocables, besides the outlines of Latin accidence. A broader basis was thus laid for that encyclopædic knowledge of things, and of words through things, than could otherwise be done.¹

Mode of using the Vestibulum.—The object is to prepare for the *Janua*. The class using the book must be able to write fluently, as well as to read articulately,

¹ We get hints as to the use of this Latin Primer from Comenius's letter to the teacher of the Vestibulary class at Patak, also from the *De Vestibulari Praxi*, etc.

Latin words, whether in print or ms. They will learn by heart the words of the Latin tongue given in their text-book, with the translation of them, and acquire perfect familiarity with the regular declensions and conjugations. The vernacular of the Latin is to be prefixed to the school editions of the book, and this is to be first read and learned, and thereafter the Latin. In this way the words, which introduce to the elements of encyclopædic knowledge, will be first known in their relation to things, and then the Latin words in relation to the vernacular, the pupil thus going from the known to the unknown. Two months should be spent in thoroughly understanding and acquiring the vernacular text, in fact in learning it by heart, before entering on the Latin equivalent. The Latin text is then to occupy four months. The teacher is always to read and explain beforehand what his pupils are afterwards to read and explain, and to be careful that no lesson is passed from till it is thoroughly acquired. The pupils are then to write the exercise in a book, and to conclude with saying it by heart. The outlines of Latin grammar are given in Latin, but they are to be carefully translated and understood before being learned. Three months are presumed to suffice for learning the grammar. The directions given have simply reference to the thorough acquisition of the forms. They are to be learned by heart, but above all, questions are to be asked in every possible way, and these questions are to be put in Latin. Little sentences are to be constructed illustrating the cases, tenses, etc. etc., and after all this is done the text

of the *Vestibulum* is to be again gone over and parsed. The Lexicon, which is simply a list of words with number-references to the part of the text in which they may be found, is finally to be read over—chiefly to test the pupil's knowledge of the meaning of all the words he is presumed now to have acquired.

In his *Ventilabrum Sapientiae* he expresses a desire that the *Vestibulum* should be thrown into a dialogue form, that the vernacular of the Latin rules should be printed in parallel columns, and that pictures of the things named should be introduced.

In 1657 Comenius published an addition to the last edition of the *Vestibulum*, in which the primitive words already used, and many others, were worked up into short simple sentences. This book (called the *Auctarium*) was intended to serve as a revision of the work done in the *Vestibulum*, to initiate into the construction of sentences, and to serve as a bridge to the *Janua*. But it was distinguished from the *Vestibulum* in this respect, that whereas the latter was an arrangement of words under the head of Things (classified), the former was alphabetically arranged—was in fact a lexicon thrown into simple sentences—e.g. under *B* we have such sentences as these: *Baccas fert laurus, non betula, vel butus. Bellua maxima, in sylvis est Barrus, in aquis balaena*; and so forth. The title of the book was *Parvulis parvulus, omnibus omnia. Hoc est, Vestibuli Latinae linguae Auctarium; voces Latinas primitivas construi coeptas et in sententiolas breves redactus exhibens.*

In praeludium Sylvam Latinam ingressuris datam, i.e. 'A little book for little ones, all things for all : that is to say, a Supplement to the Vestibule of the Latin tongue, exhibiting Latin primitive words in construction, and thrown into brief little sentences, given as a prelude to those about to enter the Latin Forest'—the 'Forest' being the collection of Latin words which formed the introduction to the last edition of the *Janua*.

An accident led him to construct the *Auctarium*. When in Amsterdam in 1656 he had his attention directed to an edition of the *Janua*, published in England with additions—those additions professing to give the roots of the Latin tongue woven into sentences. He found that this addition departed in almost every respect from the principles of his books, and was of a kind to disgust rather than to attract boys. The idea, however, pleased him, and he set himself to construct the supplement to the *Vestibulum* under the title above given. It is to be used as a revision of the *Vestibulum* and a bridge to the *Janua*. It was published in 1657.

2. THE JANUA LINGUAE LATINAE RESERATA.

First Edition.

The full title of this famous book is *The Gate of Languages Unlocked, or the Seminary of all Languages and Sciences*: that is, a compendious method of learning Latin or any other tongue, along with the elements of all the Sciences and Arts, comprehended under a hundred chapter-headings and in a thousand sentences; first published in the year 1631.

The one thousand sentences again comprehend eight thousand different words in all. The sentences are at first simple, and thereafter compound and complex. After an introduction he begins, according to his pansophic or encyclopædic plan, with the origin of the world, and in the course of his lessons takes a survey of all nature, and even includes morals and religion. It frequently happens, however, that a chapter is introduced for the sake of the *words*, not of the things taught: for example, the chapter on Ulcers and Wounds. The easiest sentences are of this fashion, 'Deus omnia creavit ex nihilo.' The more difficult are exemplified by the following, 'Incendium ex quavis scintilla, si permittis, oritur. Nam quidquid ignem concipit, id primum gliscit, dein ardet, tum flagrat et flammat; postremo, crematum redigitur in favillas et cineres.'

Carrying out his expressed aim, Comenius endeavours throughout to give equal attention to both things and words, but it is *things* that give the cue. The headings of some of his chapters will convey some idea of the scope of his writing:—Concerning the Origin of the World. Concerning the Elements. Concerning the Firmament, Fire, Meteors, Waters, Earths, Stones, Metals, Trees and Fruits, Herbs, Shrubs. These things are treated of in thirteen chapters and one hundred and forty-one sentences. Then we have 'Concerning Animals,' which, under different subdivisions, occupies the book to the nineteenth chapter inclusive. Then Concerning Man: his Body; External Members; Internal Members; the qualities or acci-

dents of the Body; Diseases; Ulcers and Wounds; the External Senses; the Internal Senses; Mind; the Will and the Affections: these occupy the book to the twenty-ninth chapter inclusive. All the mechanic arts now follow, and are concluded in the forty-eighth chapter and 539th sentence. The rest of the book treats of the House and its parts: Marriage and the Family, in which occur statements which are very curious as showing the freedom with which things were spoken about to the young of 250 years ago. Next follows Civic and State Economy, including a description of officers and institutions. The seventieth chapter begins with Grammar, and goes on to Dialectic, Rhetoric, Arithmetic, Geometry, and all branches of knowledge, briefly describing what these are. In the eighty-second chapter Ethics is introduced, and twelve chapters are assigned to twelve virtues. Games, Death, Burial, the Providence of God and Angels form the subjects of the concluding chapters." This is encyclopædism.

The German equivalent ran in parallel columns, and was to be read first.

Comenius thus, with great labour and no small ingenuity, gives effect to his own conceptions of the substance of school-instruction and the method of teaching languages at one and the same time. The reader will at once see that the lines on which the *Janua* are constructed are precisely the same as those on which the *Vestibulum* is laid down, and the following higher-class text-book (*Atrium*) again repeats (as will shortly

be seen) the substance of the *Janua* in a still more developed and extended form. A brief grammatical Appendix and Lexicon was to be added to the *Janua*, but I have not met with these except in connection with the new edition, of which I will now speak.

Second Edition.

The improved form of the *Janua* was published between 1650-54, during his school experience in Hungary, though substantially written at Elbing before 1650. It is on the same lines as the first edition, but much more elaborate and more difficult. In the fifteenth chapter of the *Novissima Linguarum Methodus* he partly explains the changes made. He has discarded the restriction he had previously imposed on himself, of not repeating words: this he calls a superstition. The greater latitude thus allowed enables him to write about 'things' more fully and freely. The Lexicon, or Forest of Words (*Sylva Verborum*), strange to say (and contrary to his original plan),¹ comes first, and aims at being etymological throughout. Moreover, it is Latin-Latin and not Latin-vernacular. He intends this Lexicon to be first gone over, then the Grammar which follows, and finally the *Janua* itself. As to a vernacular-Latin Lexicon, he thinks that boys should construct that for themselves. Again, whereas it was thought desirable that the vernacular should accompany, nay precede, the

¹ But in accordance with the plan of the second edition of the *Vestibulum*.

Latin in the original *Janua*, the former is now discarded. The reasons for beginning with the Lexicon, and then proceeding to the Grammar and thereafter to the text of the *Janua*, curiously illustrate the fancifulness of the author's mind. 'When we want to build a [wooden] house we first go to the wood and cut down trees (this is the Lexicon of words); then we shape and fit the wood cut down (this is the Grammar); and it is only then we proceed to build the house (*i.e.* to give continuous narrative).' The practical result is that the pupil has to go through lists of vocables which would fill two hundred octavo pages, and then a Grammar which would fill fifty, before he begins the text-book itself. The text itself is composed of one hundred short treatises about everything on the earth, in the earth, and above the earth, including an account of man, and brief statements of morals and theology. It is, in short, an encyclopædia, arranged not alphabetically, but in a natural order, and would fill 250 pages of an ordinary school-book. Comenius apologises, indeed, for not introducing everything about everything; the state of knowledge, he regrets, does not admit of it. The vocables of the Lexicon are not by any means exhausted in the text, but all the words in the text are understood to be found in the Lexicon; but when the boy finds them there, which he very often will not, he is presented with their significations in Latin only!

I shall give here a specimen of his lessons, taking the beginning of his eighteenth lesson.

Quadrupeda : primum, mansueta pecora et jumenta.

Quadrupes quid, 161 : partes illius essentielles, 162 : genera, 163 : pecora majora, 164 : et minora, 165, 6, 7, 8 : jumenta, 169 : Canes, feles, mures, 170, 71, 72.

161. Quadrupeda prognerant foetum vivum, aluntque lacte uberum : grandiora unicum et rarius, minutiora plures et frequentius.

162. Pro integumento habent vel pilos vel villos vel lanam vel setas vel squamas ; pedes autem vel digitatos armatos unguibus (ut Canis, etc.,) vel ungulatos : et quidem ungulave solida (ut equus) vel bifida (ut bos).

And so on through twelve paragraphs.

It is quite clear that Comenius, under the influence of some fantastic notions of consistency developed in his *Novissima Methodus*, has deserted nearly all that is most characteristic and original in his system, excepting his encyclopædism. Of this he never loses sight.

*Mode of using the Janua.*¹—The Lexicon, or words, come first, then the Grammar, which teaches how to weave these words into speech, and then the text of the *Janua*, which lays the foundations, in a series of lessons, of all knowledge. Comenius defends this order, as I have said, on the ground that words are the rudiments of speech, and that the materials of house-building must be supplied before we begin to build a house. The boys accordingly are first to read with the master the words and their derivatives, as set down in the Lexicon,

¹ See Letter to the Teacher of the Janual Class ; also *De Latini sei monis studio dissertatio*, and elsewhere.

as often as may be necessary, then take their pens and transcribe them into their writing-books, and, finally, say them by heart. The Grammar, which is a complete syntax of the language, omitting elegancies, etc., is, as I have said, Latin, but the prior study of the Lexicon is presumed to make the Latin intelligible, while its simple construction, as compared with other Grammars, makes it easy and attractive. The text of the *Janua* is finally to be taught in the same manner as the *Vestibulum* was taught.

In his later years Comenius himself became sensible of certain defects, and recommended that the vernacular of all words should be given in the Lexicon, and also that the vernacular of the text should be printed in parallel columns; thus returning to his original ideas.

The mode of using the *Janua* is given in more detail in the *Dissertatio de Sermonis Latini Studio*, à propos of the first edition, and he there tells us that the object, as regards mere language, is to give the pupil all the common words of the Latin tongue, to teach him their meanings and roots, and also to teach him to form sentences out of them with grammatical correctness. An Etymological Lexicon and a Grammar containing the *body* of the language (all save special idioms and elegancies) are consequently added.

Like the *Vestibulum*, the *Janua* is to be gone through ten times. At the *second* reading the whole should be written out, vernacular and Latin. The teacher should at this stage speak in Latin to his pupils, and induce them also to speak to each other in Latin; and with a

view to the increase of knowledge, will conversationally explain and amplify the lessons of the *Janua*. At the third reading, the teacher will *read out* the Latin and call for the translation. Meanwhile the first part of the Syntactical Grammar will be written out by the pupils. At the fourth perusal, the remainder of the Grammar will be written out, and the naming of the parts of speech and of the inflexions in the text of the *Janua* thoroughly acquired. At the fifth reading, special attention will be given to the roots and derivatives, and the pupils will begin to write out the Lexicon. At the sixth perusal, synonyms, paronyms, etc., will be explained; and at the seventh reading the whole will be thoroughly parsed with reference to the syntactical rules, which will be written out carefully with their subjoined examples. The recitation of the text will begin at the eighth perusal. At the ninth reading special attention will be paid to the logical analysis—examination on the substance of the text and on grammar. This sharpens the wit. The afternoon is always to be spent in writing out the morning's work, in throwing the *Janua* into the form of question and answer. The tenth perusal will consist of the boys challenging each other to repeat parts of the text. The written exercises will consist of Latin compositions, the vernacular being constructed by the teacher (apologues, fables, etc.) out of the words in the *Janua* and its Lexicon, and translated into Latin by the pupils.

It has to be noted that Comenius, in his preface to his *Auctarium* (vol. iv.), distinctly repudiates the first

edition of the *Janua*, and wishes to be judged by the second edition, which is substantially a new book. His words are :—‘*Januam nostram linguarum postremam—plenioram illam Encyclopaediolae faciem referentem et prae qua priorem illam non amplius agnoscimus nostram.*’ In doing so he deserted his own principles.

3. THE ATRIUM.

The third Latin book was called the *Atrium*, and this was to effect the transition from the *Janua* to the *Palatium* or *Palace of Authors*.¹ Comenius now wishes to introduce the pupil to the Latin tongue, used in a freer way than in the *Janua*. The sentences are longer, and the treatment of each subject more ample. The main end kept in view is the familiarising of the pupil with the elegancies and idioms of the language, and the introducing him to rhetoric in a practical form. To effect this, he gives a Grammar of Latin specially designed to gather into one view the peculiarities and elegancies of the Latin tongue. This Grammar is written in Latin, and the pupil is to be now presumed competent to understand it. While intent on giving the pupil acquaintance with the varieties and peculiarities of Latin, and furnishing him with a liberal *copia verborum*, he does not depart from his great principle to make things carry words. The text of the *Atrium* follows the same line as the *Janua*, but indulges in a larger and more detailed treatment of the same subjects. In the

¹ The *Atrium* is called elsewhere *Palatium* in the *Didactica*, and the *Palatium* is called the *Thesaurus*.

Janua, for example, he contents himself with such a sentence as this :—

‘Omnia reliqua ex his [quatuor elementis] constant. Quippe ex iis generantur, iis nutriuntur, in eadem dum corrumpuntur resolvuntur.’

In the *Atrium* he expands this as follows :—

‘Hæ sunt elementaris mundi rotæ quatuor, per quas eunt et redeunt omnia. Elementis vacans locus nullus est : omnia his referta tamque densé stipata sunt ut inane spatium nusquam detur, sed agitatio, attritus, permistio ; quorum temperatura salutem dat rebus, intemperies perniciem. Solatio est, si quid corrumpitur, in sua redire principia indeque res prodire novas.’

And so on with the usual 100 chapters and 1000 paragraphs (which, in the *Janua*—first edition—were merely short sentences). In the edition before me, the *Atrium* extends over 153 folio columns, and is considerably longer than Cæsar’s *Gallic War*.

The comparison of the two passages which I have cited will give a clear idea of the differences between the two books.

This book having been thoroughly mastered, along with its accompanying Grammar, the pupil is now supposed to be able to enter freely on the study of Latin authors, a *Palatium* or *Thesaurus* of selected works being put before him. And certainly any boy, who had mastered it, would be quite competent to attack Cæsar, Sallust, and the easier Orations of Cicero. The poets, however, would present a difficulty, for the reading of whom the way had not been prepared.

Mode of using the Atrium.—A complete Latin Grammar in Latin is prefixed to the *Atrium*, and is to be *first* studied by the pupils ; then the text, and finally the Lexicon. The general method of procedure is presumed to be the same as in the *Janua*, but on this Comenius is not explicit, and it would seem as if he considered the printing of the vernacular to be unnecessary at this advanced stage. We cannot imagine that he intended the *Atrium*, with its Grammar, to be learned by heart. The human mind could not have borne the burden.

SUBSIDIARY TEXT-BOOKS.

1. *The Orbis Pictus* (*The World Illustrated*)

In 1657 appeared the *Orbis Pictus*, the second edition following in 1659. This book was intended to be supplementary and subsidiary to the *Vestibulum* and *Janua*. It is simpler than even the first edition of the *Janua*, and much more suitable for a school-book than the second edition of the *Vestibulum*. In this little book Comenius applies his principles more fully than in any other, for we have not only a simple treatment of things in general, but of things that appeal to the senses, and along with the lessons we have pictures of the objects that form the subjects of the lessons. Indeed, the book may be best described as a series of rude engravings of sensible objects, accompanied by a description of them in short and easy sentences. For example, we have the picture of a ship with its sails

partly set, and a number attached to each part of the ship, which corresponds to a number in the lesson—thus: the No. 2 is engraved on the sails, and in the lesson we have this sentence, ‘The ship has (2) sails.’ The title of the book was, ‘The World of Sensible Things drawn; that is, the Nomenclature of all Fundamental Things in the World and Actions in Life reduced to Ocular Demonstration, so that it may be a Lamp to the *Vestibulum* and *Janua* of Languages.’¹

There were various editions of the *Orbis*; that however which was in most complete accord with Comenius’s plan was arranged in three columns, thus:—

Super terra	auf der Erden	terra f., ¹ die Erde.
sunt	sönd	
alti montes ¹	hohe beerge ¹	altus-a-um, hoch.
profundae valles ²	tiefe Thäler ²	profundus-a-um, tief.
Etc.	Etc.	Etc.

The figures referred to a wood-engraving of a landscape on the same page, and were affixed to the mountains, hills, etc., as has been explained above in the case of the lesson on the ship.

‘The foundation of all learning consists,’ says Comenius in the preface, ‘in representing clearly to the senses sensible objects, so that they can be apprehended easily. I maintain that this is the basis of all other actions, inasmuch as we could neither act nor speak wisely unless we comprehended clearly what we wished to say or do. For it is certain that there is nothing in the

¹ In some of the very numerous editions the title is slightly modified. The editions also varied in other respects, but the above gives Comenius’s own conception of the book.

Understanding which has not been previously in the Sense ; and consequently, to exercise the senses carefully in discriminating the differences of natural objects is to lay the foundation of all wisdom, all eloquence, and all good and prudent action.' It is the absence from the school of the object about which we may be speaking that makes learning and teaching alike so troublesome and fruitless.

The cuts were done by Michael Endter of Nuremberg, to whom he felt most grateful for his labours, and for enabling him to complete his design of an elementary book. 'This work,' he writes, 'belongs to you ; it is entirely new in your profession. You have given a correct and clear edition of the *Orbis Pictus*, and furnished figures and cuts, by the help of which the attention will be awakened and the imagination pleased. This will, it is true, increase the expense of the publication, but it will be certainly returned to you.'

It was consistent with the plan of the book, that it should contain the vernacular only, or the Latin only, or both. Comenius suggests that the vernacular itself would be best learned from the *Orbis*. The *Janua* had an enormous sale, and was published in many languages ; but the editions and sale of the *Orbis Pictus* far exceeded those of the *Janua*, and, indeed, for some time it was the most popular school-book in Europe, and deservedly so.

2. *The Schola Ludus.*

Comenius frequently states in his writings that the element of sport should be introduced into schools, and with this view constructs a school drama, in which the *Janua* (and a good deal of the language of the *Atrium*) is introduced. The title is, *Schola Ludus seu Encyclopaedia Viva, Hoc est, Januae Linguarum praxis Scenica: res omnes nomenclaturâ Vestitas et Vestiendas, sensibus ad vivum repraesentandi artificium exhibens amoenum*. In this singular production there are five acts, twenty-one scenes, and fifty-two *dramatis personae*. The object of the author is to give a theatric praxis of the *Janua*, and partially of the *Atrium*, by bringing the facts of the natural world into a scenic representation. The characters represent the various departments of knowledge, e.g. the geographer, the metallurgist, the chemist, and so forth. For example, in the fifth scene of the second act, Water is the subject, and there enter on the stage the following personages:—*Aquinus* (representing water in general), *Marius* (representing the sea) *Nubianus* (representing the clouds), and *Stillico* (representing rain-drops, ice, foam, etc.). These interesting characters give a great deal of valuable information. Anything more dreary than this sportive *Janua* it is impossible to conceive; yet he assures us, in his dedicatory epistle, written at Amsterdam in 1657, that it was most popular and successful with boys and masters! and elsewhere he says that it was performed with great applause before the Princess and all her Court in

Hungary. He believed that all school-exercises might be converted into games.

Comenius was of opinion that every stage of school-work during the Pansophic septennium might have its dramatic exhibition. This dramatic sport in intellectual work he connects mystically with the words of Wisdom (the Son), in the 8th chapter of Proverbs: 'I was by Him as one brought up with Him; and I was daily His delight, rejoicing always before Him; rejoicing in the habitable part of His earth; and my delights were with the sons of men!'

The signification of *Ludus* as the Latin for school had also its influence in suggesting these dramatic exhibitions.¹

3. *Text-Book of Greek.*

He gives a specimen of what he would propose for boys learning Greek in his *Ventilabrum Sapientiae* published in 1657. It is, as might be expected, Latin-Greek. He proposes that Vocabularies should be taught to begin with—1. The words that are alike in Latin and Greek, *e.g.* Abyssus, ἄβυσσος. 2. Those which differ very little, *e.g.* fama, φήμη, forma, μορφή. 3. The more common words not alike, *e.g.* frater, ἀδελφός. Then a few brief Greek rules should be given, and an outline of Greek accidence appended to the body of the book. As his chief object was to introduce to the Greek Testament, the text-book, he

¹ For the *Palatium*, see end of next chapter.

says, ought to consist of 100 select sentences of a moral kind (the Latin and Greek in parallel columns), to be thoroughly learned, the Lord's Prayer, the Creed, and the Ten Commandments. This would constitute a Vestibulum, to be followed by a Janua, consisting of the Greek Testament in Latin and Greek, or it might be a summary of Testament narrative and of the Christian faith.

So with Hebrew.

In concluding this account of the text-books, it has to be stated that Comenius himself in his old age admitted that he had departed from one of his own leading principles in attempting to teach too much within a limited space and time, and had burdened the mind of boys with what was suitable only for adults.¹

¹ A knowledge of the Text-Books is best to be obtained from the books themselves, but in connection with them the prefaces should be read, and the letters addressed to the teachers of the new Patak School, an account of which is contained in the next chapter.

PART IV.

THE INNER ORGANISATION OF A PANSOPHIC SCHOOL, AND THE INSTRUCTION-PLAN.

THE external organisation of a school-system has been exhibited in the *Great Didactic*. The Mother School, the Vernacular School, the Latin School or Gymnasium, and the University, constituted together Comenius's school-system for a State. The existing school-systems of modern Europe, and especially that of Germany, are a tribute to Comenius's sound judgment. The organisation of instruction is certainly not in accordance with Comenius's pansophic or encyclopædic aspirations, but the attention which is now given to real studies, and to the cultivation of the senses, substantially give effect to his views.

The inner character and life of a school—a Latin school or Gymnasium being kept specially in view—is to be gathered from the 25th chapter of the *Novissima Methodus*, and from the numerous writings of the period from 1650-54, when Comenius was engaged in organising a model school at Patak, in the north-east of Hungary, about twenty miles from Tokay.¹ These

¹ On the Theiss, known as the entrepôt of the Tokay wine.

writings are numerous, prolix, and very tiresome because of their repetitions. The following account is based on an examination of all these writings, and ought to be compared with the ideas of the various graded schools expounded in the 'Great Didactic.'

THE SCHOOL.

The word school, *schola* or *ludus*, indicates an institution where many are assembled together to strive for some end, but to strive under the conditions of play, and these conditions are movement, spontaneity, society, rivalry, order, and pleasurable exercise, all of which things are to be attained by following the methods laid down. The school will thus truly become a *ludus literarius*. The object of the school as a prelude of life is to train pupils to know with a view to wisdom, to act, to express themselves,—*sapere, agere, loqui*. The letters of the words themselves yield the aims of the school, thus :—

Sapienter

Cogitare :

Honesté

Operari :

Loqui

Arguté.

The initial letters, it will be observed, make the word *Schola*, and this quite suits Comenius's fanciful way of looking at things, and evidently yields him a real satisfaction. The foundation of all is Knowledge,

because to act wisely or speak well is impossible for an ignorant or foolish person.

A school has been called *Officina Humanitatis*, a manufactory of humanity, and this designation, as appears from the Great Didactic, Comenius adopts.

Now, when we say that the school is a manufactory of *Humanity*, we mean that it has to aim at producing in men that perfection of humanity whereby a man becomes the image of God, the most Wise, most Powerful, most Holy.

When we say that the school is an *Officina*, we mean that it is a place where, by the use of certain instruments and a certain art, we accomplish what we desire to accomplish. The instruments are the persons and things employed in teaching and learning, and the art is the method laid down whereby tongue, action, hand, and morals become what we desire them to become.

These generally are the aims and characteristics of a school when we have passed within its walls. While keeping them carefully in view, we have to lay down our scheme more fully.

General Statement.

The aim is pansophic or encyclopædic. We have to teach all things to all, if we would train to knowledge and wisdom. We have to instruct in morality and train to virtue; we have to instil piety and train to a pious habit; and, finally, we have to form the tongue

to expression and eloquence. Only in this way can we train man to true humanity, and make him again the image of God.

With this view the school must be organised, and a set amount of work marked out for each grade or class. There should be seven classes (those in the lowest class being about twelve years of age). The three lowest classes should be called Philological; the fourth, Philosophical; the fifth, Logical; the sixth, Political; and the seventh, Theological.

The Philological classes would naturally be designated by the text-books they used: the first or lowest, which would use the *Vestibulum*, being called *Classis Vestibularis*, the second *Classis Janualis*, and the third *Classis Atrialis*. The Philosophical class would give a rational account of things; the Logical would give discipline in reasoning; the Political would give instruction in laws and the social order (including history); and the Theological would instruct in the mysteries of the Kingdom of Heaven.

A separate room and a separate master should be provided for each class, and the building should be on an ample scale. There should be a public table for poor scholars, so that the *res angusta domi* should be an obstacle to none.

In a school so organised, and with such aims, the pupils will learn all things necessary for this life and the next, and that thoroughly. It will be a School of Universal Wisdom—in other words, a *Schola Panso-*

phica.¹ 'There is nothing in Heaven or Earth, or in the Waters, nothing in the Abyss under the earth, nothing in the Human Body, nothing in the Soul, nothing in Holy Writ, nothing in the Arts, nothing in Economy, nothing in Polity, nothing in the Church, of which the little candidates of Wisdom shall be wholly ignorant.' They will be trained further in the true and spontaneous use of knowledge, and in prudence and morality. In this *palæstra* they 'will learn, not for school, but for life,' so that the youths shall go forth energetic, ready for everything, apt, industrious, and worthy of being intrusted with any of the duties of life, and this all the more if they have added to virtue a sweet conversation, and have crowned all with the fear and love of God. They will also go forth capable of expression and eloquence, and that not merely in their own tongue, but in the Latin, Greek, and Hebrew.

For the attainment of these great results three instruments are necessary: good books, good teachers, and a good method.

The seven classes into which the school is to be divided are to consist respectively of those pupils who are at the same stage of progress, and are pursuing the same objects of study. Each class should be in a separate room, that the attention of the pupils may not be distracted. Each class, again, should be divided

¹ 'Schola Pansophica: Hoc est, Universalis Sapientiae officina ab annis aliquot ubiubigentium erigi optata: nunc autem Auspiciis Illustrissimi Domini D. Sigismundi Racoci de Felseovadas, etc. Saros-Pataki Hungarorum feliciter erigenda. Anno redditæ mundi salutis MDCLI.'

into decuriae composed of ten boys each, and presided over by a boy older or more advanced than his fellows, who should be called Moderator, Inspector, Pædagogus, or Decurio. The duty of the decurio will be to see that all the boys of his division are in their places at the right time, that they attend to the work of the moment, to assist backward boys, or report them to the preceptor, and to be an example of conduct to all. The master himself shall not stand in a corner, nor shall he walk about, but he will occupy a raised position facing the light, so that he may see and be seen by all, and where drawings and illustrations of lessons may also be easily seen.

The school-time must be so ordered that every year, month, week, day, hour, may have its own task. The tasks should be so arranged that they are within the powers of the average mind: in this way the more ordinary natures will be stimulated, while the more precocious and brilliant will be retarded to their advantage. Pupils should be admitted only at the beginning of the school year. On no day should boys do more than six hours' work, and those all in public and in school. The rest should be given to relaxation and domestic duties. The school is the proper place for *school* work; moreover, home-work is apt to be badly done, and badly done work is more hurtful than no work at all. The hours should not be consecutive: the morning should be devoted to studies that call into requisition the intellect, the judgment, and the memory; the afternoon to the discipline of hand, voice, style, demeanour (*gestus*).

The occupations of the Pansophic school are not all of equal importance. They may be classed as primary, secondary, and tertiary. The primary are those which contain the essence or substance of Wisdom (knowledge), Virtue, Piety, and Eloquence, such as Languages, Philosophy, and Theology; the secondary are auxiliary to these, such as History; the tertiary only indirectly contribute to the primary occupations, *e.g.* all that pertains to vigour of health and mental alacrity, such as recreation and sports. But all the occupations and studies have a place *at each successive stage* of progress, and are to be presented *according to the same method*.

At the same time, the order of the instruction is subject to certain general laws: for in the younger classes we have to appeal chiefly to the senses, and to cultivate observation; and as the pupils advance, we draw more on the activity of the memory, the intellect proper, and the power of expressing what is known.

In the exercise of these powers there are also degrees: for example, under the head of the Intellect there are three stages; the first comprehends the statement of fact, the second the why of the fact, and the third the fundamental principles which underlie the fact and its reason, and enable the student to extend his investigations in the same line: for example, a knowledge of the compass and of the use of it is the first stage, a knowledge of its construction and relation to other things is the second stage, and such a knowledge of the principles lying at the foundation of its construction and application as will enable the student to

advance further in the same line of investigation is the third stage. So in Language you have three stages : the power to prattle, to speak, and to speak eloquently, and instruction must proceed in this order. The same remarks apply to the graduated order of auxiliary studies, such as History. This word is used in an extended sense : in the third, or Atrial class, it means stories which bear on the daily affairs of life and on morals ; in the fourth, or Philosophical class, it deals with Natural History—the study of the works of God ; in the fifth, or Logical class, it deals with the history of human inventions—mechanical history ; in the sixth, or Political class, it deals with the history of the customs of various nations ; and in the seventh, or Theological class, it deals with the universal history of man in the Providence of God. The first or Vestibulary, and the second or Janual class, are here omitted, because they are occupied with the mere nomenclature of things, which stands for history to young children. The same remarks apply (but are not always successfully applied by Comenius) to all the studies and exercises of the school.

The senses, he has said, have to be specially appealed to in the earliest classes, since they are the guides to knowledge. *We* do not speak to our pupils, but the *things themselves* ; and everything should be taught by means of the things themselves, or where these fail, by accurate representations of them. The walls of the school should be hung with pictures, and the reading-books should be full of them. The intellect again will be exercised by the explanation of everything that is

read or taught, and by requiring the explanation to be given by the scholars,—for we do not form parrots, but men. The memory also has to be cultivated, for, as Quintilian says, *Tantum scimus quantum memoria tenemus*. But the exercise of the memory does not mean the wearing the pupil out by requiring him to learn things off by heart; but the frequent and sufficient presentation of things clearly understood, till, of their own accord, they adhere. Weekly memory-contests, at which the pupils challenge each other to state what has been learned, will be of value in stimulating the memory.

As regards style: let the pupils be required to write weekly letters to one another on given subjects, and let the decurio look after these, under the supervision of the master.

The tongue will be exercised by requiring that the conversation of the boys one with another be in Latin. The voice will be cultivated by teaching all to sing, and by teaching notation at certain fixed times.

The morals and demeanour of the pupils will receive the close attention of the masters, and their reproof of wrong, and their commendation of good conduct will always be prompt. Further, the formation of a school, and even of individual classes, into a republic, with its senate and proctor, which will hold sessions occasionally, and pronounce judgment on conduct, will do much to prepare for the business of life.

Piety will be fostered by taking care that in going to bed and rising, prayers be said and the Holy Scrip-

tures read; also in beginning and ending the studies of the day, and before and after meals.

To encourage the more active-minded boys, special reading should be allowed of authors outside the usual school-course, such as the sacred dialogues of Castalio, the Colloquies of Erasmus, Epistles of Seneca, the Histories of Nepos, Curtius, etc.

All sorts of exercises and innocent games are to be not only permitted but encouraged, for giving vigour and health to the body; and also sedentary games which call for a certain quickness of wit.

Scenic representations and the acting of plays are to be encouraged as a relaxation, so long as the subject is not immoral in its character or treatment, as are the Roman plays, but constructed to represent some memorable histories, sacred or profane. These not only afford recreation, but are educationally of good effect in many ways.

The times of relaxation should be frequent—half-an-hour after every hour's work. The daily time-table should be arranged somewhat as follows:—

Forenoon.

6 to 7 A.M.	Hymns, Reading of Scripture, Meditation, and Prayers.
7½—8½	The primary task of the class—more theoretically given.
9—10	The same practically given.

Afternoon.

1—2 P.M.	Music, or some other pleasant mathematical exercise.
2.30—3.30	History.
4—5	Exercises in Style.

There should be two half-holidays weekly ; a fortnight at Christmas, Easter, and Pentecost ; and a whole month at the harvest-time.

More detailed Statement.

A still more detailed statement of the work of the seven classes is to be obtained by reading what we have already said of the Text-books in Part III., and by what follows :—

I. *The Vestibulary Class.*—On the four walls of the class-room should be painted the Latin characters, models of the regular declensions and conjugations, and brief moral precepts.

By means of a thorough study of the *Vestibulum* in the way already laid down, the class will acquire a knowledge of things in an elementary and yet fundamental way, and also of the roots of words,—that is to say, it will be instructed in the foundations of all intelligence ; and in addition to this, it will be instructed in morality in a form suited to boyhood. The rudiments of arithmetic will at this stage be given, a knowledge of weights, measures, and geometrical forms, and music. The teacher will take advantage of the *words* learned to add to the *knowledge* of the pupils.

II. *The Janual Class.*—On one wall should be painted illustrations of the most important natural objects mentioned in the text of the *Janua*, and opposite these the more important artificial objects should be

drawn. The remaining two walls should be occupied with grammatical warnings, having reference to the peculiarities of the pupil's mother-tongue.

In religion the Catechism should at this stage be thoroughly learned.

The knowledge of things and words and grammatical construction is to be obtained from the *Janua*.

Addition and Subtraction in Arithmetic; the plane figures in Geometry, and Music, are to be taught.

The Composition exercises will consist of the construction of clauses and sentences on the foundation of the words and rules of the *Janua*.

III. *The Atrial Class*.—The walls should be painted over with emblems, and with a selection of warnings regarding the elegancies of writing and speech.

In religion the work of this class will be to read an epitome of Scripture (in Scripture words), and to learn by heart a collection of psalms, hymns, and prayers. The pupils will make acquaintance also with those narratives which are likely to generate virtue and piety.

In addition to the proper study of the Atrial Text-book, Division and Multiplication in arithmetic, and instruction in solid figures, should be given. Music will be continued and select verses from the Latin poets read. Exercises in style on the basis of the Atrium will be given.

At this stage the *Schola Ludus* is to be introduced. This, as I have elsewhere explained, was simply the *Janua* thrown into dramatic form in accordance with

the author's conviction that all the work of the Latin school might take a gamesome form.

1V. *The Philosophical Class.*—On the walls of this class-room things are to be represented connected with arithmetic, geometry, statics, anatomy.

In religious instruction, hymns and forms of morning and evening prayer, and of prayers before and after meals and studies, and a life of Christ harmonised from the four Gospels, are to be read.

The class-book will be the first Palace of Wisdom, in which there will be a survey and explanation of all objects of nature written in a style higher and more ornate than the style of the previous books.

The Rule of Three in Arithmetic, Geometry, Trigonometry, and the elements of Statics, are to be taught; also Instrumental Music, and Natural History made up out of Ælian and Pliny.

As to style, which ought now to be on the model of classical authors: this will be suspended so as to admit of the last of the afternoon hours being devoted to Greek, the object being to give sufficient Greek to enable the boys, when they reach the subsequent classes, to read the New Testament in the original.

V. *The Logical Class.*—The walls of the class-room should be painted over with a selection of Rules of Logic and ingenious emblems representing emanations of mind.¹ The religious instruction shall include the

¹ Whatever this may mean.

study of a collection of hymns and prayers and a manual of the whole Bible, to be called the *Gate of the Sanctuary*, in which the substance of the sacred writings, as much as possible in the words of Holy Writ itself, will be given: also a chapter of the Greek New Testament should be read daily.

The afternoon hours should be devoted to Arithmetic, Geometry, Astronomy, Geography, and the elements of Optics, along with the History of Mechanical Inventions.

The class-book belonging to this stage will contain a free treatment of various arts and a strict scientific treatment of one, so as to bring into view the characteristics of exact scientific truth as distinguished from opinion.

Exercises in style should be given at this stage on the model of the historians—Cæsar, Curtius, Nepos, and Justin. The study of Greek is to be carried on by those only who desire to prosecute that language specially: these should read Greek orators, such as Isocrates, and also the *Moralia* of Plutarch.

VI. *The Political Class.*—The pictures on the class wall should represent the significance of order and connection; e.g. there should be pictures of the human body wanting certain limbs, others having a superabundance of limbs, and one complete and well-formed.

In religion the full text of Scripture will be studied.

The class-book (the third book of Universal Wisdom) will treat of human society.

Besides the applications of Arithmetic (*ex arithmeticiis*

Logistica ?), applications of Geometry to Architecture, the theory of the planets, and the doctrine of eclipses, will be taught: compendiums of the geography of the world will also be made.

For the sake of style, Sallust and Cicero, Virgil and Horace, will be read. The pupils will now discuss questions in Latin prescribed beforehand, and be encouraged to use greater freedom in their Latin style. Verse-making yields no fruit worthy of the labour, but should not be prohibited in the case of those who have a disposition that way.

Those desirous of continuing their Greek studies should read Thucydides and the poets.

VII. *The Theological Class.*—Scriptural emblems, shadowing forth the mysteries of Theology, should adorn three sides of the class-room, and one should be devoted to tables of the Hebrew Grammar and to select Hebrew sayings.

The class-book, the concluding Palace of Wisdom, should explain the intercourse of souls with God, etc. Mathematics should consist of a study of sacred architecture; e.g. the construction of the Mosaic Tabernacle, the Temple of Solomon, etc. The history taught should be universal history, with special reference to the history of the Church and the order of Divine Providence. The exercises in style should be in sacred subjects; and, in addition to these various studies, Hebrew should be acquired.

In the treatise *De Latinae linguae studio perfectè insti-*

tuendo Dissertatio Didactica, published in 1637, he assumes that the upper classes read selections from classical authors, which he proposes to arrange in four books—Epistolary, Historical, Oratorical, and Poetical,¹ and that the relative Lexicon, either in Latin-vernacular or vernacular-Latin, should be a Lexicon of phrases, idioms, and varieties of expression; *e.g.* under the word *Dubito* would come the following words and expressions, *Haereo*, *hesito*. *Ambigo*. *Fluctuo*, *Incertus sum quid agam*. *Incertum mihi est*. *In ancipiti sum*; and so forth.

Looking to the exercises in style prescribed in Comenius's latest edition of his educational views, as given above, I think we must assume that the selections from classical authors were to be read along with the special class-book of the year; if not by all, at least by all who could overtake them: and this, notwithstanding the fact that extracts from classical authors would doubtless be introduced into the class-books, in so far as relevant to their subject-matter.

Thus in the space of seven years, beginning at twelve years of age, the human being will be formed to a whole and complete humanity in respect of Things, Tongues, Morality, and Piety; he will be able to judge of all things, and in no important thing to err; and, fortified with the elements of universal knowledge, he may now be allowed to study all books, human and divine, and enter on the business of life.

Palatium Epistolicum, with a hundred epistles; *Palatium Historicum*, *P. Oratorium*, *P. Poeticum*.

CONCLUSION.

As Comenius increased in years the religious element in his educational theories assumed more and more prominence. But he never lost sight of his leading principles. The object of all education was to train children to be sons of God, but the way to this was through knowledge, and knowledge was through method. His disposition to see fanciful parallels in nature increased, and Scripture more and more seemed to him to confirm his teachings. A mystical tendency was manifested in his final works written in Amsterdam between 1654-57, especially in his final educational utterance written in Amsterdam, and entitled,—

‘The Idea of Didactic out of the Eternal Arcana.

‘The Son can do nothing of himself, save what he seeth the Father do; for what things soever he doeth, these also doeth the Son likewise. The Father loveth the Son, and sheweth him all things.’—*John* v. 19.

From this flow the following propositions (since the ‘invisible things of God from the creation of the world are clearly seen, being understood by the things that are made,’ *Rom.* i. 20) :—

1. That schools ought to be a kind of imitation of heaven.
2. That the intercourse of teachers with taught ought to be like that of fathers with sons.

3. That sons are able to know and do nothing of themselves.

4. Whatever therefore they ought to know or to do (both here and for eternity),—all should be first shown to them.

5. That the said showing beforehand devolves on fathers, that is, on teachers.

6. And this, not by presenting examples alien to the matter in hand, but proper to it, so that things that have to be done may be taught by doing them.

7. That the imitation of all things be exacted in a paternal spirit.

8. And that it be exacted so that sons may do all things in like manner as the example.

On the other hand the eternal idea is departed from whenever—

1. All things are done in any sort of fashion, regard being had to no type, much less the best.

2. The intercourse of teachers with pupils is nothing else save that of hirelings with sheep—for the sake of the fat and the wool.

3. The pupils are left to themselves, and are required to do what they have not yet been taught to do, as if they were able of themselves to know what a teacher knows.

4. And are not taught all things necessary for this life and the next, but only scraps.

5. And the teacher does not teach all things himself, but commits them to another, or presents to the pupil a dumb teacher—a book.

6. And what he teaches he does not teach by

examples, but by precepts, and, when the pupil does not do what he is ordered, by blows.

7. Or, when he *does* give examples, gives what are alien to the matter in hand, and does not show how they are to be rightly imitated.

8. Or, if he show examples, does not insist on the imitation of them by much and constant practice.

9. And does not exact that imitation in such a way as to make of every pupil a master capable of doing things equal to what has been pointed out to him as models.

This is the sum of all that I wish to have done by those who undertake to rear little sons of God. I have no more to say. And you, gentlemen, with your schools and all the youth of your city¹ dedicated to Christ, I commend to the grace of God, and myself to your favour ; signing these my last utterances on Education on the day of the conversion of Paul, on which may the hearts of us all turn to the Lord saying, as Saul said, ‘ Lord, what wilt thou have me to do ?’

And now, O Jesus Christ, Eternal Wisdom, who rejoicest in the habitable parts of the earth, and whose delight is among the sons of men, who wast well pleased, when dwelling with us in the flesh, to converse with little ones and to think them worthy of Thy embraces as being heirs of the Kingdom of Heaven, count worthy of Thy favour now those who do not disdain to serve Thy little ones ; so that by means of them Thy Blessed Kingdom, here of Grace, there of Glory, may receive a goodly increase, worthy of Thee, the King of the Eternal World.

Amen. Amen. Amen.

¹ Amsterdam.

BRIEF CRITICAL SURVEY.

THE object of this volume is to present Comenius himself to the English reader—not Comenius as I may understand him. The latter would have been a comparatively easy task; the task which I have undertaken has been a laborious one. The historical position of Comenius, and his relation to his predecessors, have been brought into view in the Introduction, and his educational aims and labours have been fully set forth in the sketch of his life. The actual work he did is also fully and succinctly set before the reader. We have now only to survey critically the leading characteristics of his system.

The Realism of the Humanists had failed to produce the results they had anticipated. It was in England and Scotland, rather than on the continent of Europe, that the genuine Humanistic spirit was most active in schools. But not for long. Schools and schoolmasters fell back under the dominion of words, abstract propositions, and barren localities. This was inevitable. The preoccupation of men's minds with theological and political strife caused the true significance of the educational revival to fall out of sight. The indispensable condition, moreover, of the continuance of the methods of Trotzendorf, and Sturm, and Ascham, was a school of Teachers, and a tradition of Method. There was neither the one nor the other.

Comenius's inspiring motive, like that of all leading educationalists, was social regeneration. He believed that this could be accomplished through the school. He lived under the hallucination that by a proper arrangement of the subject-matter of instruction, and by a sound method, a certain community of thought and interests would be established among the young, which would result in social harmony and political settlement. He believed that men could be manufactured. Had we Chinese to deal with, the dream of educational enthusiasts might possibly be realised ; but its realisation would be a misfortune. We have, happily, not Chinese to deal with, but the strong and vigorous European races, full of character and individuality,—the loss of which would be the loss of manhood. Variety, inequality, and strife seem to be essential to the true life of the higher races.

Humanism, which had practically failed in the school, had, apart from this fact, no attractions for Comenius, and still less had the worldly wisdom of Montaigne. He was a leading Protestant theologian,—the pastor and bishop of a small but earnest and devoted sect,—and it was as such that he wrote on Education. The best results of Humanism could, after all, be only culture, and this not necessarily accompanied by moral earnestness or personal piety: on the contrary, probably dissociated from these, and leaning rather to scepticism and intellectual self-indulgence. At the same time, it must be noted that he never fairly faced the Humanistic ques-

tion; he rather gave it the cold shoulder from the first. His whole nature pointed in another direction. When he has to speak of the great instruments of Humanistic education,—the ancient classical writers,—he exhibits great distrust of them, and if he does not banish them from the school altogether, it is simply because the higher instruction in the Latin and Greek tongues is seen to be impossible without them. Even in the Universities, as his Pansophic scheme shows, he would have had Plato and Aristotle taught chiefly by means of analyses and epitomes. It might be urged in opposition to this view of the anti-Humanism of Comenius, that he contemplated the acquisition of a good style in Latin in the higher stages of instruction: true, but in so far as he did so, it was merely with a practical aim,—the more effective and, if need be, oratorical enforcement of moral and religious truth. The beauties and subtleties of artistic expression had little charm for him, nor did he set much store by the graces. The most conspicuous illustration of the absence of all idea of Art in Comenius is to be found in his school drama. The unprofitable dreariness of that production would make a reader sick were he not relieved by a feeling of its absurdity.

The educational spirit of the Reformers, the conviction that all—even the humblest—must be taught to *know* God, and Jesus Christ whom He has sent, was inherited by Comenius in its completeness. In this way, and in this way only, could the ills of Europe be remedied, and the progress of humanity assured. While, therefore, he sums up the educational aim under the

threefold heads of Knowledge, Virtue, and Piety or Godliness, he in truth has mainly in view the last two. Knowledge is of value only in so far as it forms the only sound basis, in the eyes of a Protestant theologian, of virtue and godliness. We have to train for a hereafter.

In virtue and godliness Comenius did not propose to teach anything save what the Reformed religion taught. His characteristic merits in this department of instruction were these :—

1. Morality and godliness were to be taught from the first. Parents and teachers were to begin to train at the beginning of the child's conscious life.

2. Parents and teachers were to give milk to babes, and reserve the stronger meat for the adolescent and adult mind. They were to be content to proceed gradually, step by step.

3. The method of procedure was not only to be adapted to the growing mind, but the mode of enforcement was to be mild, and the manner of it kind and patient.

Had Comenius done nothing more but put forth and press home these truths he would have deserved our gratitude as an educationalist.

But he did more than this. He related virtue and godliness to *Knowledge*. By knowledge Comenius meant knowledge of nature and of man's relation to nature. It is this important characteristic of Comenius's educational system that reveals the direct influence of Bacon and his school. To the great Verulam he pays

reverence for what he owed him, but he owed him even more than he knew.

In this field of *Knowledge*, the leading characteristic of the educational system of Comenius is his Realism. We have pointed out,¹ in contradiction of the assumptions of the modern sensationalist school, that the Humanists were in truth Realists, and it may be safely said that there can be no question among competent judges as to the Realism which ought to characterise all rational and sound instruction. The question rather is as to the field in which the Real is to be sought—in the mind of man, or in external nature. As the former may be called Humanistic-Realism, so the latter may be called Sense or Naturalistic-Realism. Of the latter, Comenius is the true founder, although his indebtedness to Ratich was great. Mere acquisition of the ordered facts of Nature, and man's relation to them, was with him the great aim—if not the sole aim—of all purely intellectual instruction. And here there necessarily entered the governing idea, encyclopædism, or pansophism. Let *all* the arts and sciences, he said, be taught in their elements in all schools, and more fully at each successive stage of the pupil's progress. It is by *knowledge* that we are what we are, and the necessary conclusion from this must be, 'let all things be taught to all.'

It is at this point that many will part company with Comenius. The mind stored with facts, even if these be ordered facts, will not necessarily be much raised in

¹ See Introduction.

the scale of humanity as an Intelligence. The natural powers may be simply overweighted by the process, and the natural channels of spontaneous Reason choked. In education, while our main business is to promote the growth of moral purpose and of a strong sense of duty, we have to support these by the discipline of intelligence, and by training to power of work rather than by information. On the other hand, only those who are ignorant of the history and the recognised results of education will wholly abjure Realism in the Comenian sense; but it has to be assigned its own place, and nothing more than this, in the education of a human being. The sum of the matter seems to be this, that while a due place in all education is to be assigned to sense-realistic studies, especially in the earlier years of family and school life, the Humanistic agencies must always remain the most potent in the making of a man.

Comenius and his followers, again, confound knowledge with wisdom. He affirms that 'all authors are to be banished from school except those that give a knowledge of useful things.' Wisdom is certainly not to be opposed to knowledge, but it depends more on a man's power of discrimination, combination, and imagination, than on the extent of his mental store of facts. Were it not so, our whole secondary education, and all the purely disciplinary part of our University instruction, would be very far astray. If the ancient tongues are to be learned simply with a view to the sum of knowledge they contain, it would be absurd to

waste the time of our youth over them. It would be better to impose on our Universities the duty of furnishing guaranteed translations for the use of the public. We shall not, however, involve ourselves in controversy here, as our object is merely to point out, generally, the strong and weak points of our author.

Next in importance to pansophy or encyclopædism, and closely connected with it, is the principle that a *knowledge of words and of things should go hand in hand*. Words are to be learned through things. Properly interpreted, and under due limitations, this principle will, we presume, be now generally accepted. We say, under due limitations, because it is manifest that the converse proposition, that 'things are learned through words,' is easily capable of proof, and is indeed, in our opinion, the stronghold of Humanistic teaching in its earlier or school stages.

It is in the department of *Method*, however, that we recognise the chief contribution of Comenius to education. The mere attempt to systematise was a great advance. In seeking, however, for foundations on which to erect a coherent system, he had to content himself with first principles which were vague and unscientific.

Modern Psychology was in its infancy, and Comenius had little more than the generalisations of Plato and Aristotle, and those not strictly investigated by him, for his guide. In training to virtue, moral truth and the various moralities were assumed as if they emerged full-blown in the consciousness of man. In training to

godliness, again, Christian dogma was ready to his hand. In the department of knowledge, that is to say, knowledge of the outer world, Comenius rested his method on the scholastic maxim, *Nihil est in intellectu quod non prius fuerit in sensu*. This maxim he enriched with the Baconian induction, comprehended by him however only in a general way. It was chiefly, however, the imagined harmony of physical and mental processes that yielded his method. He believed that the processes of the growth of external things had a close resemblance to the growth of mind. Had he lived in these days he would doubtless have endeavoured to work out the details of his method on a purely psychological basis; but in the then state of psychology he had to find another thread through the labyrinth. The mode of demonstration which he adopted was thus, as he himself called it, the Syncretic or Analogical. Whatever may be said of the harmony that exists between the growth of nature and of mind, there can be no doubt that the observation of the former is capable of suggesting, if it does not furnish, many of the rules of educational method.

From the simple to the complex, from the particular to the general, the concrete before the abstract, and all, step by step, and even by insensible degrees,—these were among his leading principles of method. But the most important of all his principles was derived from the scholastic maxim quoted above. As all is from sense, let the thing to be known be itself presented to the senses, and let every sense be engaged in the

perception of it. When it is impossible, from the nature of the case, to present the object itself, place a vivid picture of it before the pupil. The mere enumeration of these few principles, even if we drop out of view all his other contributions to method and school-management, will satisfy any man familiar with all the more recent treatises on Education, that Comenius, even after giving his precursors their due, is to be regarded as the true founder of modern Method, and that he anticipates Pestalozzi and all of the same school.

When we come to consider Comenius's method as specially applied to language, we recognise its general truth, and the teachers of Europe and America will now be prepared to pay it the homage of theoretical approval at least. To admire, however, his own attempt at working out his linguistic method is impossible, unless we first accept his encyclopædism. The very faults with which he charged the school practices of the time are simply repeated by himself in a new form. The boy's mind is overloaded with a mass of words—the names and qualities of everything in heaven, on the earth, and under the earth. It was impossible that all these things, or even pictures of them, could be presented to sense, and hence his books must have inflicted a heavy burden on the merely verbal memory of boys. We want children to grow into knowledge, not to swallow numberless facts made up into boluses. Again, the amount that was to be acquired within a given time was beyond the youthful capacity. Any teacher will satisfy himself of this who

will simply count the words and sentences in the *Janua* and *Orbis*, and then try to distribute these over the school-time allowed by Comenius. Like all reformers, Comenius was over-sanguine. I do not overlook the fact that command over the Latin tongue as a vehicle of expression was the prime necessity of the time for all who meant to devote themselves to professions and to learning, and that Comenius had this justification for introducing a mass of vocables now wholly useless to the student of Latin. But even for his own time, Comenius, under the influence of his encyclopædic passion, overdid his task. His real merits in language-teaching lie in the introduction of the principle of graduated reading-books, in the simplification of Latin grammar, in his founding instruction in foreign tongues on the vernacular, and in his insisting on method in instruction. But these were great merits, too soon forgotten by the dull race of schoolmasters, if, indeed, they were ever fully recognised by them till quite recent times.

Finally, Comenius's views as to the inner organisation of a school were original, and have proved themselves in all essential respects correct.

The same may be said of his scheme for the organisation of a State-system—a scheme which is substantially, *mutatis mutandis*, at this moment embodied in the highly-developed system of Germany.

When we consider, then, that Comenius first formally and fully developed educational method, that he introduced important reforms into the teaching of languages,

that he introduced into schools the study of Nature, that he advocated with intelligence, and not on purely sentimental grounds, a milder discipline, we are justified in assigning to him a high, if not the highest, place among modern educational writers. The voluminousness of his treatises, their prolixity, their repetitions, and their defects of style, have all operated to prevent men studying him. The substance of all he has written has been, I believe, faithfully given by me, but it has not been possible to transfer to these pages the fervour, the glow, and the pious aspirations of the good old Bishop.

If any are disposed to regard with impatience the encyclopædic proposals of Comenius, I would have them consider that two great Englishmen, Milton and Locke, shared substantially the same views. And when we compare a youth who has been instructed merely in the bare, bald facts of the outer world, and his relation to them, with a youth who has been left to himself, we rightly conclude that there is a certain educational power even in mere information. And yet the summed-up result, in respect of intelligence and character, in the case of youths of encyclopædic and superficial acquisitions is not satisfactory. On the contrary, it is sadly disappointing when compared with the labour expended by both teacher and taught. On the other hand, we certainly find the supreme educational result—that is to say, wisdom, virtue, and capacity for affairs—to have been attained (as nearly as human imperfection admits of) by

a totally different process. We are thus forced to revise our theories. The way whereby nature makes a mind is not so plain as at first appears. If educators could find that secret way, it would doubtless be their duty to follow it, cost what it might. It will probably however, be found that while there can be only one true general method in education, the maximum of mental capacity is attainable by different individuals by means of different studies, for the simple reason that the food which can be assimilated by one cannot be assimilated by another. The conclusion to be drawn from this (and I think it a very important one in all education) is that no school-curriculum should be so arranged as to use up all a pupil's brain energy. Time should be left for the indulgence of idiosyncracies even if these run in the direction of apparent idleness and day-dreaming.

In seeking to ascertain our duty as Educators, let us not wilfully exaggerate differences in modes of procedure where there is essential community of aim. All educationalists, of whatsoever school, who have endeavoured seriously to think on the subject on which they write, desire to produce wise, virtuous, religious and capable men with bodies fitted to be an apt vehicle of Spirit. 'Culture,' it is true, is the deity which some worship, but it is difficult to say what culture is, and until we have settled this, we may leave it out of account. This we can safely affirm, that self culture is possible only by the culture of that which is not self. Were any man to propose himself to himself as the object of his self-discipline, he would emerge from the educational laboratory

a narrow-souled, insufferable prig. Culture from another point of view leads only to that most detestable of all civilized products—an “elegant mind.” Let us drop culture, then, and confine ourselves to the common ground of wisdom, virtue and religion, and if it be by any means possible among us northern nations, let us add the grace of courtesy which the Greeks called *εὐκοσμία*. All agree so far, and the question at issue these three hundred years, and still unsettled, is by what processes can this supreme end be best attained? By moral instruction and training, all alike answer; but by what further instruments? By the study of man and of human life and thought, as these are embodied for us in language and literature, or by the study of external nature and our relations to it? We do not propose here to attempt to answer the question, but in the debate between Humanists and Sense-Realists there is a growing consensus visible. For all thinkers will, I think, now admit that up to the age of puberty at least, subjects which appeal to the senses and connect a boy with external nature ought to take precedence of all others except the vernacular language and arithmetic, and that after that age the instruction should be more formal and severe and based principally on Language, Literature and Mathematics. Thus far, the incontestable facts of psychology and physiology settle the wordy war on scientific grounds. The same facts point to the conclusion that even encyclopædism, in a restricted sense, has its place, at least in the earlier stages of education.

NOTE ON p. 40.

Hartlib also was the author of a scheme for an Agricultural College contained in his "Propositions for the erecting of a College of Husbandry learning" 1651, and it was to him that Sir W. Petty wrote in 1647 a letter containing a scheme for a great technical College where "all apprentices might learn the theory of their trades before they are bound to a Master" &c.*

* Quoted by Mr Browning in his Educational Theories.

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